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Natural History.

ANIMALS IN MENAGERIES.

BY

WILLIAM SWAINSON, A.C.G. F.R.S. L.S.

VICE-PRESIDENT OF THE ORNITHOLOGICAL SOCIETY, ETC.

LONDON:

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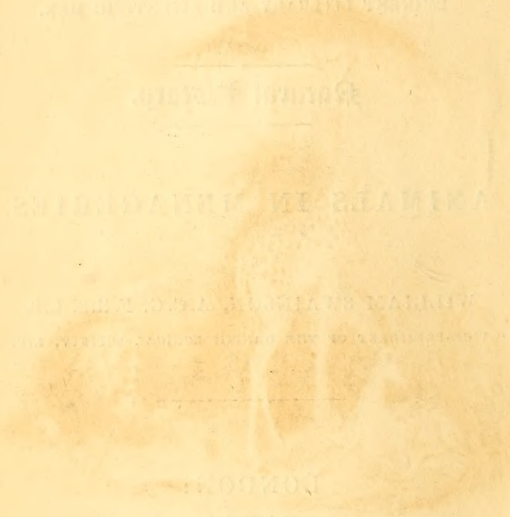
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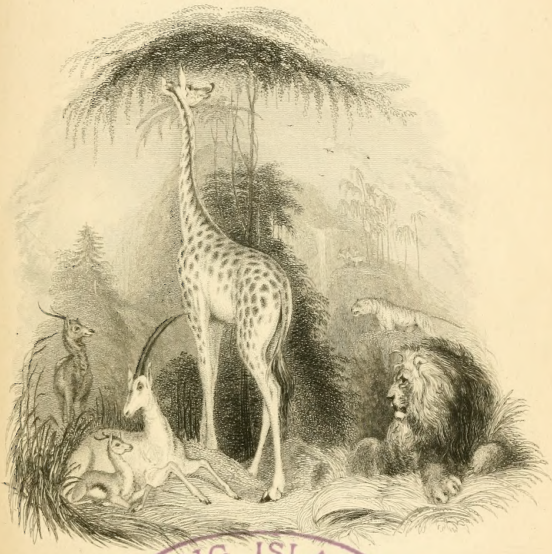


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William Swainson, A.&C.I. F.R.S.

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Drawn by W. Swainson. Engraved by E. Finden.

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ANIMALS IN MENAGERIES.

PART I.

MENAGERIE OF QUADRUPEDS.

The subject to which this volume is devoted, according to the original plan, is one in which little of novelty can be expected. The institution of Zoological Gardens, for the reception and exhibition of living animals, has given birth to several popular accounts, under the same title as this, in which the objects usually seen in such collections have been repeatedly described, and anecdotes of their habits and manners in a state of nature introduced. The same plan will be here pursued; for the scientific naturalist, who has not had a living specimen under his eye, can only speak of its manners from the accounts of others.

The best account of animals in menageries, so far as their peculiarities in such a state are concerned, would come from the keepers themselves, if such persons were as skilful in writing upon, as they are in managing, their charges. For, after all, what can a systematic naturalist or a field observer do on a subject of this kind, but take for granted what he hears from others? He is almost debarred from the power of giving original observations, unless upon such native animals as he is acquainted with. "Dead men tell no tales;" and so is it with confined beasts. If he has merely to describe a preserved animal, he may find something new, or something requiring illustration, in its structure or its colour; and if he writes with nature before him, his account is original; but, when he comes to touch upon its manners and

habits, he must, in almost every instance, have recourse to others: he is absolutely shut out from all other sources of information; and he is, from necessity, often obliged to avail himself of resources used by others on similar occasions. Nevertheless, if he judiciously select from the best authorities, and reject those which he considers questionable, he at least may do some good, by discountenancing what has not the appearance of truth, and thus purifying animal biography from some of its numerous errors. Besides, the stream of discovery is constantly bringing within our reach morsels of truth and of veracious anecdote, which require adding to the general stock of knowledge; and these will sometimes so alter the former history of an animal *, as to give it an entirely new character.

The scientific ornithologist will, we hope, be satisfied by the description of more than two hundred new or little known birds contained in the Third Part; being that portion of our ornithological labours which want of space obliged us to omit in a former volume, and of which, in fact, it should be viewed as an Appendix.

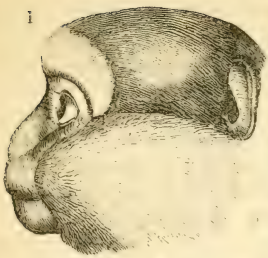
Such a considerable number of quadrupeds have been, at different times, imported into England, and exhibited in menageries, that it became absolutely necessary to make a selection. We have, therefore, omitted the elephant, the rhinoceros, the oran-outang, and a few others of the best known; since their histories have been so often repeated, that they must be in the hands of almost every one. This has given us more space for the introduction of others, whose natural history has been illustrated by the observations of recent travellers.

The Diana Monkey.

Cercopithecus Diana, *Geoff.* Simia Diana, *Linn.* La Diane, *Audub.* Palatine Monkey, *Pennant.* (*Fig.* 1.)

The Diana monkey derives its name from its frontal crescent-shaped band, as resembling that ornament

* As in the case of the glutton, *Gulo luscus.*



which poets and mythologists assign to the goddess of hunting. It is one of the most gentle and graceful monkeys usually seen in menageries. Of its habits in a state of nature we know nothing. A living specimen, in the Zoological Gardens, is described as "moderately playful, and quite familiar." It is a native of Western Africa, and is stated, by Marcgrave and the older naturalists, to inhabit the forests of Congo and Guinea.

In size, the Diana monkey is about eighteen inches in length, without reckoning the tail, which is very long, and measures nearly two feet. Its colouring is peculiarly varied and graceful: the head, neck, sides, and middle of the body beneath, are of a dark ash-colour, which becomes gradually darker on the outside of the limbs and tail, and is finally converted into a deep black at the extremities. The face and ears are intensely black. Besides the white frontal band before alluded to, there are broad bushy tufts of white hairs on the sides of the face and on the chin, which is thus ornamented by a flat beard, two or three inches long: the chest and inside of the arms is covered by a well defined patch of white, and another, of a light orange, is on the belly.*

The Mona Monkey.

Cercopithecus Mona, *Geoff., Griff. Cuv.* i. 268. *Zool. Gard.* ii. 37.

There is a general resemblance between this and the Diana monkey; but the Mona is still more beautiful in its colours, and more elegant in its form. It appears, in short, to exhibit a superiority of sagacity, of penetration, and of gentleness, far above any other species of its tribe. It seems to be a native more of Northern than of Tropical Africa. We owe to M. F. Cuvier the fol-

* Zool. Gard. ii. 35.

lowing interesting account of an individual which was long a favourite at the Paris menagerie:—Upon his first arrival he was extremely young; and his gentleness, and total want of malice and petulance, insured him the free range of the apartment. Age did not alter his excellent disposition; and, as he increased in size and strength, his address and agility became unparalleled. Yet all his motions were gentle, and his actions circumspect: he was persevering in his wants and wishes, but never violent in the attempt to enforce them. When, after considerable solicitation, his requests were still refused, he would go off in a gambol, and find entertainment in some new object. He had no idea of property, but took every thing that pleased him, even such articles as had previously caused his punishment; and he executed his thefts with dexterity and silence. He would open locks wherein the key had been left, untie knots, open the links of a chain, and search pockets with so much address that you did not feel his hand there, although conscious he was in the act of thieving. The examination, indeed, of pockets was his favourite occupation; doubtless from expecting to find articles of food. He was not very conspicuous for affection; but when tranquil, and not engaged, he received caresses with pleasure. When tempted to play, he signified his assent by many graceful motions: he would throw himself into all possible attitudes, bite gently, press himself against the person, and accompany all these little gambols with a soft and gentle cry, which appeared to be his expression of joy. He never made grimaces; but, on the contrary, his countenance was always calm, and frequently serious.

But monkeys, like other animals, vary in their temper; and a specimen of the Mona, kept at the Zoological Gardens, "occasionally exhibits a temper as capricious and as savage as is possessed by almost any of the tribe."

The colouring of the Mona is particularly beautiful. The hair is of a brilliant golden green; while the back and sides are of a rich marroun, variegated with black:

the outer portions of the limbs and tail are of a delicate slate-coloured grey; while the neck, chest, belly, and the internal facing of the limbs, are pure and shining white. The cheeks are thickly tufted with straw-coloured hairs; above the eyebrows is a transverse black band, extending on each side as far as the ears, and surmounted by a crescent-shaped stripe of grey: the ears and hands are of a livid flesh-colour.

The Red or Patras Monkey.

Cercopithecus ruber, *Geoff.* Simia rubra, *Linn.* Le Patras, *Buff.* Red Monkey, *Pennant, Zool. Gard.* vi. 137.

The delicate red colour which predominates over the upper parts of this monkey, renders it of easy cognisance. It is also one of those frequently seen in collections, and it is particularly common in the forests of Senegal. In confinement, it is described as vicious, vindictive, and full of mischief, evincing little or no attachment even to the hand that feeds it. Bruce gives an interesting description of their manners in a state of nature. They descended in troops from the tops of the trees to the extremities of the branches, earnestly noticing, and apparently much amused by, the boats, as they passed along the river. They then began to take courage, and pelt at the passengers with pieces of wood, &c.; thus provoking a most unequal combat. When fired upon, they uttered the most frightful cries; and although many fell, the survivors appeared by no means willing to relinquish the contest: on the contrary, they redoubled their efforts: some flung stones at their adversaries, while others collected excrements for a similar purpose; all, in short, displayed a determination of spirit which must at all times render them formidable to opponents of weaker powers than those of men.

The general colour or tint of the upper parts of the body is reddish fawn-colour, while those beneath and on the inner surface of the limbs is dull whitish: above the eyes there is a black band, which is sometimes margined above by another of white.

The Common Green Monkey.

Cercopithecus Sabæus, *Geoff.* Simia Sabæa, *Linn.* Singe vert, *Briss.* Callitriche, *Buffon, Zool. Gard.* x. 303.

This is one of the most common monkeys seen in menageries and shows; yet so deficient are we in animal biographies, that the celebrated Adanson is the only writer who gives any account of its natural habits. This enterprising traveller found the green monkey in immense numbers in the forests of Senegal: they remain on the trees in large troops; and preserve the most profound silence, even when they are wounded. Totally unconscious of being surrounded by these mischievous little animals, the first intimation that our traveller had of their presence was, by being pelted with dead branches of trees, which they flung upon him from above on every side; nor were they to be intimidated by the discharge of his gun: they returned to the attack, and twenty-three were killed in less than an hour. M. F. Cuvier speaks of one which was at the Paris menagerie, as remarkably beautiful and gentle. It was fond of being caressed by those whom it knew, and seldom evinced any desire to hurt. When contented, its satisfaction was expressed by a peculiar gentle grunt.

The size of the *Callitrix*, or green monkey, seems to vary. One writer describes it as from sixteen to eighteen inches long; another, from twenty-one to twenty-two inches; both measurements excluding the tail, which is much longer. The upper parts of the body are of a greenish yellow, resulting from a combination of yellow and black rings upon the hair, in which, however, the yellow predominates: the external facing of the limbs is more greyish: the tail ends in a parcel of long yellow hairs: the lower parts of the body, limbs, &c. are greyish; and the face, ears, and skin of the hands are black: in some, the neck and chest are white.

The Vaulting or Lesser White-nosed Monkey.

Cercopithecus petaurista, *Geoff.*, *Zool. Gard.* vi. 137.

This very elegant little species is seldom seen in our menageries. Two, however, have been at different times in the possession of the Zoological Society, and have been thus described. The Blanc Nez, or white-nosed monkey, is one of the smallest, and at the same time one of the most curiously marked, among its own tribe. It may always be recognised at the first glance by the white patch which occupies the extremity of its nose, and which occurs only in one other species, the *C. nictitans*, or white-nosed monkey of Pennant. In manners and disposition it is lively, active, and generally good tempered: it was, however, by no means familiar, and appeared to be particularly anxious to conceal its face; crying out and kicking with all its might, when handled for the purpose of inspection. It is a native of Guinea, and seems to be peculiarly susceptible of cold; seldom bearing, for any length of time, the rigour of a European climate.

The Dog-tailed Baboon.

Cercocebus cynosurus, *Geoff.* Malbroue, *Buffon*, xiv. Dog-faced Baboon, *Shaw*, i. 32. *Audub. Hist.* 4. § 2. f. 5. Malbrouck, *Griff. Cuv.* i. 266.

This animal, called by the French the Malbrouck, is sometimes seen in our menageries, although neither his appearance nor disposition place him in competition with the more elegant and docile species of this family. The length of the hinder limbs evinces the peculiar adaption of his structure for climbing and living among trees; this disproportion of hands and feet, while it renders his progress upon the ground slow and awkward, is no impediment in climbing, but imparts, on the contrary, a wonderful degree of agility in leaping from branch to branch, and from tree to tree. In a state of nature, these animals congregate in large troops, and live in the thick virgin forests of Tropical Asia. They are said to annoy the traveller both by the petulance of their

motions, and the incessant iteration of their cries; while their amazing agility is well calculated to excite his wonder. This celerity of motion is even conspicuous under confinement: they are said, even then, to shoot forward with such sustained vigour, as to make several turnings in their course as if flying, sustained in the air only by the impulse which they may receive from striking the walls of their cage. This assertion, however, may be reasonably doubted. When in captivity, their voice is seldom heard, and then only in a dull feeble sort of grunt. When young, they are docile, particularly the females; but in adult age they become excessively malicious: this extreme irritability prevents the species from ever being completely tamed: gentleness fails, and, if treated with violence or unkindness, he becomes melancholy and soon dies. The extraordinary dexterity of this species is shown in the use of their hands. If a man, by any accident, loses his thumb, we see that the main power of the hand is gone; yet, notwithstanding the extreme shortness of this member in the Malbrouc, it can seize, between the thumb and the fore-finger, the smallest object with the most wonderful facility. In eating fruits or roots, these monkeys pull them with their teeth, and smell every article of food before it is devoured; in drinking, they suck: their senses, in all respects, are extremely good, without being remarkably delicate, and they are evidently gifted with great powers of sight.

The colour of the upper parts of the Malbrouc is olive brown; and of the under, including the throat, chest, body, and internal parts of the limbs, dull white: there is also a whitish band over the eyes. The buttocks have very large callosities: the tail is longer than the body, and the cheek pouches are distinct.

The White-eyelid Monkey.

Cercocebus Æthiops, *Geoff.* Simia Æthiops, *Linn.* Mangabey, *Buff.*, *Audub.* White-eyelid Monkey, *Pennant.*

Of this monkey there appears to be two races, or possibly (according to Geoffroy) two species. Their

manners and disposition, however, are confessedly so much alike, that one description is applicable to both. They are more docile and less mischievous than the common green monkey; but like them are constantly in motion, and assuming strange grotesque attitudes. M. F. Cuvier remarks, that, from the wonderful vivacity of their motions, an observer would almost imagine that their limbs were stronger, and furnished with more joints, than those of ordinary monkeys. The females, as is generally the case, are more docile and gentle than the males. They have a singular mode of expressing their feelings, by raising their lips, and showing their teeth; and they exhibit another peculiarity in always carrying their tails completely reversed — that is, in nearly a parallel line with the back. Both these races occur in the same regions, and appear confined to Tropical Africa.

The colours of the two races generally called by this name, are very similar. In that called by M. Geoffroy the Smoke-coloured Monkey (*C. fuliginosus*), the prevalent tint is grey slate-brown, without any spot on the head or neck, while the other has the fur of a vinaceous brown, which becomes red on the crown of the head: there is also a white band between the eyes, which is continued to each side of the back of the neck. In both, however, the upper eyelid is white. To this latter, the original name of Æthiops is more strictly applied.

The Lion-tailed Monkey.

Cercocebus Silenus, *Illiger.* Simia Silenus, *Linn.* Occanderou, *Buff.* Papio Silenus, *Geoff.* Lion-tailed Baboon, *Pennant.*

The tufted tail of this animal, by some called a monkey, and by others a baboon, has procured it the trivial name of Lion-tailed; and perhaps to the same cause, as well as to the malicious character assigned to the species by Buffon, we may attribute its more classic name of *Satyrus.* The species is mentioned by many of the old travellers; and although not very common in our menageries, it is sometimes brought alive to

Europe. It appears to inhabit the forests of Ceylon, but of its natural habits we are altogether ignorant. In captivity, it has been described as a most vicious and malignant animal; and such was the character of two individuals mentioned by Buffon: yet another, formerly at Exeter Change, seems to have been much the reverse, and not to have possessed any bad qualities; while a fourth, observed by Mr. Griffiths in Wombwell's collection, "was so far gentle and sociable, as not to be confined within a cage, but merely fastened by a light chain of some length. In this situation, had the animal been so disposed, it might have found opportunities of gratifying those malicious and savage inclinations which have been attributed to the whole race. The same writer very justly observes, "that it is at all times difficult to discover the real character of a species, from a few individuals. Their dispositions undergo changes, equally great with their persons, at different periods of their existence; so that both the personal and moral character of an animal may be widely different, and equally true, when taken during the young, adolescent, or aged period of its life."

M. F. Cuvier describes a female, as then living in the Paris menagerie. The length of the body was about eighteen French inches; that of the tail, ten. The whole animal was of a very fine deep black, excepting the belly, breast, and a circle or ruff of long hairs round the head, all which parts were white: the face and hands were also black; but the callosities on the buttocks were reddish. This is probably the Full-bottom Monkey of Dr. Shaw.

The Entellus Monkey.

Semnopithecus entellus, *Cuv.*, *Zool. Gard.* iv. 82.

Living specimens of this monkey are rarely seen in the menageries of Europe, and even preserved skins are seldom to be met with in our museums. Designed by nature to inhabit the hottest regions of Tropical India, it is peculiarly suceptible of a lower temperature; since it is related that one, in the possession of the celebrated

traveller Thunberg, died from cold in the temperate latitudes of Southern Africa. The specimens both of the Paris and Zoological menageries did not, in fact, long survive their arrival in Europe. Thunberg, who had an opportunity of seeing these animals on the island of Ceylon, says that they are by no means uncommon, and that the natives have such a superstitious feeling towards them, that they are treated with respect: tame individuals are seen in the houses; and these are often visited by their wilder brethren of the woods. The latter, it is true, are scared away by the natives, but never destroyed. "Emboldened by this impunity, the monkeys come down from the woods in large herds, and take possession of the produce of the husbandman's toil with as little ceremony as though it had been collected for their use: with a degree of taste that does them credit, they prefer the cultivated fruits of the orchard to the wild ones of their native forests. Figs, cocoa-nuts, apples, pears, and even cabbages and potatoes (yams?), form their favourite food. The numbers in which they assemble render it impossible for the sufferer to drive them away, without some more effectual means than he is willing to employ. He is thus compelled to remain a quiet spectator of the devastation, and to submit without repining to his fate." The scientific history of this species is amply illustrated in the work which has furnished the above extract. We must likewise notice a very remarkable circumstance connected with the change of form which this monkey and several of its congeners undergoes in the shape of the cranium, or skull, between the period of early youth and matured age, since it illustrates the truth of one of the primary axioms of the phrenologists. "In the early stages of their growth," observes Mr. Bennett, "the forehead is broad and elevated, the cavity of the cranium proportionally large, and the muzzle but slightly prominent; but as they advance in age, the forehead gradually diminishes in size, contracting in a remarkable degree the dimensions of the cavity within, and the muzzle is prolonged to a considerable extent. These changes, which are common

to the whole tribe, but are peculiarly striking in the present genus, in consequence of the prominence of their foreheads in a young state, are accompanied by a corresponding change in the habits of the animals. When taken at an early age they are readily tamed, become playful and familiar, are extremely agile, although generally calm and circumspect in their motions, and learn to perform a variety of tricks, which they execute with no little cunning and address. After a time, however, their playfulness wears off; their confidence is succeeded by mistrust; their agility settles down into a listless apathy; and instead of resorting, as before, to the resources of their ingenuity for carrying any particular point, they have recourse to the brute force which they have acquired in its stead. At length they become as mischievous, and sometimes even as dangerous, as any of those monkeys which in their young state offer no such indications of good temper and intelligence." *

The height of the living specimen, formerly at the Zoological Gardens, when in a sitting position, exceeded two feet; and the length of the tail, which was usually curled in a single coil, measured nearly three. The upper parts of the body in this species are uniform ashy grey, darkest on the tail, which is throughout of equal thickness. The under parts are dingy yellowish white: the arms, hands, and feet are dusky black; the face is also blackish: above the eye-brows is a line of long, stiff, projecting, black hairs: a greyish white beard passes round the face, and extends upwards in front of the ears, which are long and prominent, and black; this beard is not pendent, but protrudes forward: the tail is tipped with a few long hairs.

The Negro Monkey.

Semnopithecus Maurus, *Cuv.* Simia Maura, *Linn.* Guénon Négre, *Buff.* Negro Monkey, *Pennant.*

The veracious Edwards was the first British naturalist who recorded this species as being in the menageries

* Zool. Gard. vi. p. 84.

of this country; and since his time it has been occasionally in the travelling collections; while to Dr. Horsfield we are indebted for the only account of its natural habits yet given to the public. "It is found in abundance in the extensive forests of Java, where it forms its dwellings on trees, and associates in numerous societies: troops, consisting of more than fifty individuals, are often found together; so that, on meeting them in the forests, it is prudent to observe them at a distance. On the approach of man, they emit loud screams; and by the violent bustle and commotion excited by their movements, branches of decayed trees are frequently detached and precipitated on the spectators below. Their fur is so much esteemed by the natives, that they are looked upon as beasts of the chase; in these pursuits, which are generally ordered and attended by the chiefs, the animals are attacked with cudgels and stones, and cruelly destroyed in great numbers. The skins are prepared by a simple process, which the natives have acquired from the Europeans; and they conduct it at present with great skill. It affords a fur of a jet black colour, covered with long silky hairs, which is usefully employed both by the natives and Europeans in preparing riding equipages and military decorations. When young, the negro monkey feeds on tender leaves of plants and trees; and when adult, it has a plentiful and varied repast in the abundance of wild fruits which are produced in its native forests. The Javanese, although partial to some of their native monkeys, as domestic animals, appear to have a peculiar dislike to this, which they neglect and despise: its disposition, indeed, may have caused this prejudice. Dr. Horsfield observes, that, in confinement, it requires much patience to improve, in any degree, the natural sullenness of its temper: it will remain for many months grave and morose; and as it contributes nothing to the amusement of the natives, it is rarely found in the villages or about the dwellings. The Javanese name is Budeng.

The colour of the fur, as already intimated, is of a jet black above, and grey beneath; but this belongs only to the full-grown adult. Immediately after birth, the young are of a fulvous or reddish yellow colour; this gradually changes to a mixed grey, and this again as gradually attains the deep black of the full-grown animal. The most striking characteristic of the negro monkey is the great length of the extremities: the arms and fore-arms are particularly slender; so that, in its ordinary movements, the rump is considerably elevated. It is very doubtful, after all, if the middle-sized black monkey of Edwards is really the same as that from Java; but another which he alludes to, is in all probability this species.

The Chestnut Long-armed Monkey.

Semnopithecus Pyrrhus, *Horsf. Zoological Researches in Java.*

We know not whether living examples of this more recently discovered species, which inhabits the same region and the same forests as the last, have yet reached this country; but, as it may be transported with equal facility, we may confidently expect it will not long remain a stranger to our menageries. Dr. Horsfield, who is its first describer, states that it agrees in all points of structure with the species last noticed, but that it is constantly and permanently distinguished by its reddish brown colour. Its peculiarities, indeed, appear to be well known to the Javanese, who give it the distinct name of *Lutung*, in opposition to that of *Bubeng*, which is conferred alone upon the negro, or black long-armed monkey of their forests. The latter is much more abundant in Java than the present, which is, moreover, a great favourite of the natives, on account of its variety and comparative beauty. Whenever an individual is captured, the greatest care is taken in its domestication, and it is uniformly treated with kindness and attention; while the black species, or *Bubeng*, as before remarked, is neglected and despised except for the value of its

fur. Several preserved specimens are contained in the honourable East India company's museum.

The fur, like that of the *Bubeng*, is long, delicate, soft, and silky: while the colour in the latter is intensely black, in this it is reddish brown, with a beautiful golden gloss on the back, head, tail, and extremities, gradually changing into a pale yellowish underneath, where, however, the golden gloss is still preserved: the fur above is long, shaggy, and thick; but on the under parts it is thin, curled, silky, and of a very delicate texture.

The Black-crested Monkey.

Semnopithecus melalophus, *F. Cuvier.* Simia melalophus, *Raffles.* Sempai, *of the Javanese.* (*Fig.* 2.)

2



This very singularly formed species was first described by sir Stamford Raffles * as a native of Sumatra, where, in the neighbourhood of Bencoolen, it is not unfrequent. We have not yet heard of living specimens having been brought to this country; but our zoological importations are now so numerous that every month brings some novelty; while, on the other hand, the coldness and humidity of our climate occasion a constant mortality, in the winter, among those animals which naturally inhabit the tropics. The species before us, with a few others, is remarkable for the great length of its hinder legs, in comparison to its arms or fore legs; a

* Trans. of Linn. Society, xiii. 245.

structure the very reverse of the gibbons (*Hylobates* Ill.), or long-armed apes of the Indian continent, which, as their name implies, have the fore legs disproportionably longer than the hinder. What peculiarities of habit result from this structure, in the present animal, we know not; for sir Stamford's account is entirely confined to the following description of its colour: —

The general form and appearance nearly resembles that of the *Simia cristata* Raffl.; but it is a little longer, and of a very different colour; being of a bright fawn, mixed with black; on the head, back, and shoulders, white: the whole of the under parts are nearly white. The head and face are small: the hairs are long, diverging round the face, and form a long and distinct crest on the head, composed of black hairs; while on each cheek there is a tuft of fawn-coloured hairs, which graduate into white: the forehead, below the crest, is of a light fawn-colour: the beard is scanty: the face is naked, slightly wrinkled, and of a bluish colour; and the facial line is so remarkably straight as to be almost perpendicular: the palms and soles of the feet are black; the thumbs of the hands very small, and the callosities large: the tail is very long and tapering, and exceeds thirty inches in length: the hair is long, soft, and silky.

The Crested Monkey.

Semnopithecus cristatus, *Sw.* Simia cristata, *Raffles, Linn. Tr.* xiii. Semnopithecus comatus? *F. Cuvier, Mam., Desmarest.*

This is another very remarkable monkey from Sumatra, also described by sir Stamford Raffles. It seems to be the same as the *Semnopithecus comatus* of the two French collectors, MM. Diard and Duvaucel: these gentlemen were employed by our illustrious countrymen as his assistants; but, availing themselves, most improperly, of this patronage, they endeavoured, in many instances, to anticipate the discoveries of sir Stamford, by sending to Europe descriptions and specimens of new

animals first discovered by their patron. Whether this was done, however, in the present instance, is somewhat uncertain; but the general fact is unquestionable, and will serve to explain why nearly all the new quadrupeds of Sumatra, discovered by sir Stamford Raffles, have received different names from his French assistants. M. F. Cuvier, in his beautiful, but not very scientific, work on quadrupeds, has figured the *S. comatus* (of which the head alone is here copied, *fig. 3.*); while the description of sir Stamford's *S. cristata* is nearly as follows:—



The length of the body is about two feet; the tail measuring near two and a half: when the animal stands on all fours, it is fourteen inches high. The colour is dark grey; the hairs being in general black with white points. The face, fore arms, hands, feet, back, and upper part of the body is pale. (The same colour, in a horse, would be called iron-grey, or grey with black points.) The disposition of the hairs on the head is peculiar; they are long, and diverge round the face, forming on the top a kind of crest: the beard is scanty: face and ears naked, and nearly black: orbits large: nose rather elevated between the orbits, but quite flat at the nostrils, which are situated at some distance above the upper lip, and open laterally: the head and face are small; the ears large and rounded; the canines long; the neck short; and the tail thin, tapering, and without a tuft: the fore thumbs are remarkably short; and the whole form light and slender. The young are of a reddish fawn-colour; forming a singular contrast to the dark-coloured adults.

This species is frequent in the forests round Bencoolen, in Sumatra.

The Barbary Ape.

Cercocebus Sylvanus, *Geoff.* Simia inuus, *Linn.*

The only part of Europe which comes within those geographic limits assigned by Providence to the family of monkeys, is the rock, or rather the mountain, of Gibraltar,—that south-western extremity of the continent, which almost encroaches upon the African shore. In the lofty and almost inaccessible fastnesses of this mountain, the Barbary apes have lived, in perfect security, from time immemorial. What they subsist upon we know not, except it may be upon the fleshy roots of several species of asphodel, which constitutes the principal, yet scanty clothing of these arid rocks, which are only here and there relieved by a stunted olive. Small companies of these apes are sometimes seen perched up among the heights, or scrambling like goats from crag to crag; yet so sagacious are they, that we could not hear of a single instance where the shooting parties, formed by the garrison officers, had ever returned with an ape, alive or dead. It is said by M. F. Cuvier, that the Magot (by which name the French distinguish this species), when in a state of liberty, is peculiarly active and intelligent; that they assemble in numerous troops, and openly attack their enemies. Their most dangerous foes seem to be the middle-sized species of wild cats; who possessing, like themselves, the faculty of climbing, often surprise them in the silence and obscurity of night. Like others of his family, the Barbary ape lives, in a state of nature, on fruits, roots, and leaves; and even when in confinement, these are his favourite aliments, but he is easily habituated to take other nourishment. In losing his liberty, however, his disposition undergoes a complete change: nor can this be wondered at; for what is more dear to all animals

than liberty? Alike incapable, in his gloomy prison, of confidence or of fear, he evinces nothing but a desire to be free; and this appears to be his only want. The painful state into which this feeling throws him, especailly when it is strongly excited by severity, soon produces a settled melancholy, which is generally followed by consumption and death. If gentleness be used, he becomes, indeed, accustomed to his prison, but loses all his natural activity: he remains seated upon the ground, his arms leaning on his knees, and his hands pendent; he looks stupidly at what is passing round him; and, unless when occasionally drawn from this lethargy by the pressing calls of nature, he appears to pass his life in a sort of intermediate state between the existence of animals and plants.*

The usual dimensions of the Barbary ape are those of a middle-sized dog, measuring from two feet to two and a half in length. The outer surface of the body and limbs is of a light yellowish brown, deeper on the head and round the cheeks: the under parts are whitish; and the face, ears, and other naked parts are flesh-coloured. The tail is so short as to appear more like a tubercle; it is, in fact, but a short skinny process.

The Black Ape.

Cercocebus niger, *Geoff.*

The uniform black colour which spreads over every part of this species, distinguishes it at first sight from all others of its own tribe. It is seldom seen alive in Europe; but two specimens have been recorded, of late years, as living in England,—one in the Tower menagerie, the other in that of the Zoological Society. So little is known of its natural habits, that its native region is even uncertain. M. Desmarest, who first described it from a skin in the Paris Museum, was informed that it came from one of the islands of the Indian Archi-

* Griff. Cuv.

pelago; and M. Cuvier, upon what authority is not mentioned, states it to inhabit the Philippine Islands. The expression of its physiognomy is described as peculiarly cunning. That at the Zoological Gardens "seems to be rather violent in its temper, and tyrannises not a little over the quiet grey gibbon, which is at present confined in the same cage."

The body is covered with long woolly hair, which becomes shorter on the limbs. Its ears are small; and its tail is a mere tubercle, less than an inch in length. On the top of the head it has a broad tuft of long hairs, falling backwards and forming a very remarkable crest.

The Mandrill, or Ribbed-nose Baboon.

Papio Mormon, *Cuv.* Simia Mormon, *Linn.* Mandril, *Buffon.* Ribbed-nose Baboon, *Pennant.*

The baboons, of all the races of monkeys, are the most hideous and disgusting in appearance, and the most ferocious and malignant in disposition. The present species, however, is more remarkable for its extraordinary form, since it is described as less savage than many of its brethren. M. Cuvier says, that it is not possible to conceive an animal more extraordinary and more hideous. When full grown, the mandrill very nearly attains the height of man; and it is held in much dread by the natives of Guinea, where it resides in impenetrable forests. Its violet-blue furrowed cheeks immediately point it out to the most superficial observer; and it is one of the most common animals of the public menageries. The great baboon of Pennant is no other than the same species in a different stage of growth. Nearly the whole tribe of baboons inhabit the tropical regions of Africa; two or three only being found in the Indian Archipelago, and not one in the New World. The manners of all these extraordinary animals, in a state of nature, are totally unknown; we shall not, therefore, fill our pages with mere technical descriptions of other species, frequently seen in shows.

The general colour above is greyish brown, inclining to olive, the chin being furnished with a sharp-pointed beard of a pale orange colour: the cheeks are naked, deeply furrowed, and of a bright violet-blue: this colour forms a striking contrast to the nose, which, in adult males, becomes of a bright scarlet, particularly towards the end: the naked, callous patch upon the buttocks is also of a beautiful violet. The tail is very short.

The Bear-like Howling Monkey.

Mycetus Ursinus, *Illiger*. Simia Ursina, Araguato, *Humboldt*. Mycetes Ursinus, *Desmarest*. Stentor Stramineus, *Geoffroy St. Hillaire*.

Although the tropical forests of the New World are destitute of those disgusting baboons which abound in those of Western Africa, yet they are not without a peculiar tribe of the same family which are equally terrific, if not in appearance, at least in the horrid tones of their voices. Hence this division of the family have been called the Howling apes. There are several species to which this name has been indiscriminately applied; but that which we shall more particularly notice, is the Araguato of Humboldt,—an animal which has been sometimes brought to Europe, and of whose extraordinary powers of voice this celebrated traveller thus writes: — "After having landed at Cumana, in the province of New Andalusia, we saw for the first time the araguato, or howling monkeys, in the journey which we made to the mountains of Cacola and the caverns of Guacharo. Although the convent of Caripé is situated in a valley, the bottom of which is elevated more than 4000 toises above the level of the sea, and the neighbourhood is consequently very cold, the surrounding forests abound in howling monkeys, whose melancholy note is heard *nearly two miles* off, especially when the weather is open."

The economy of the howling monkeys presents so many interesting peculiarities, and the species appear to

be so very similar in their general manners to each other, that we shall here condense what has been written upon them by travellers. Like most other monkeys, they are awkward and decrepit upon the ground; but the moment they begin climbing, their wonderful activity and celerity becomes apparent; they leap with perfect ease from the loftiest overhanging branches of one tree upon those of another, and hang suspended in air by their tail alone, from twigs which the spectator would imagine could scarcely sustain their weight. The social principle in them appears to be very strong; they live in numerous troops, and all unite in one common defence at the moment of danger. In those immense and almost boundless forests, which are rarely trodden by the foot of man, the howling monkeys are said to be so fearless of his presence, as to pelt the intruder with branches of trees. They seem to do this without anger, and merely to drive away an object to the sight of which they have not been accustomed. When hunted, and one of their party is wounded, the rest spring to the topmost branches, from which they send forth the most piteous cries: nor is the behaviour of the wounded individual less touching; he puts his finger to the wound, and looks steadily at the flowing life-blood, until consciousness is lost in death; even then the hunter very frequently loses his victim; since its prehensile tail is generally coiled round some branch, from which, by its peculiar organisation, it does not loosen, even after life has quitted the body. This member, indeed, constitutes a particular feature in the structure of the howling monkeys generally, and serves at once to distinguish them from all those of the Old World: it is always long; but that of the Coaita howling monkey (*Ateles paniscus*) is more than two feet long, or nearly twice the length of the body. Its use to this, and to all the species generally, is most important; since it gives a support and security to the exertions of all the other limbs: it is constantly brought into action with them, being entwined round the object nearest to the animal; thus acting as

an anchor, and giving a perfect security, even if the twigs upon which the feet are placed should give way with the weight of the body. That part of the tail which more especially is used as a coil is naked, and is described as having a second covering of very delicate skin, which forms an organ of touch as perfect and as discriminating as the hands. Nearly the whole of the division of howling monkeys, unlike their African brethren, are easily domesticated, and, if kindly treated, become attached and playful with those they live with. In a state of liberty, most of the species are said to be nocturnal; but this, strictly speaking, may be doubted. We were long in the habit of hearing the howling monkeys of Brazil, whose dreadful yells generally began about two hours before sunset, but invariably ceased soon after twilight.

The general colour of this species is of a uniform yellowish red or golden chestnut. The face is thinly covered with hair, and it has a thick beard. The only authentic figure hitherto published is that given by Humboldt: it represents the animal sitting on the branch of a tree, with a banana fruit in one hand.

The Marimond, or White-bellied Howling Monkey.

Ateles Beelzebuth, *Geoff.* Le Belzebuth, *Brisson.* Coaita à ventre blanc, *Cuvier.*

This is one of the most singular species among the American monkeys. The hair on the back and top of the head is reversed or directed forward, while that on the forehead is directed on the contrary way, thus producing a top-knot upon the crown. M. Humboldt observed this curious animal very frequently in those provinces bordering the great river Orinoco; and although we have no certain information of any living specimen being in now England, we doubt not that, ere long, its singular appearance will induce some of our countrymen now settled in the Columbian States,

to send it us from its native country. Its disposition is said to be timid and melancholy; at times, in the excess of its fear, it is even said to bite those who caress it: its anger is merely expressed by closing the lips, and uttering a guttural cry resembling *ore-o*. When in a state of freedom, this species frequently collects in considerable numbers; they are then said to embrace each other in a very grotesque way, and form themselves into an idle party: at such times they bask and stretch themselves in the sun, in perfect idleness; and in so doing, assume so many strange attitudes, that a spectator would believe, from the suppleness of their limbs, that the joints were dislocated: at other times, when exposed to the meridian sun, they lie on their back, fold their arms, look upwards, and in this extraordinary position will remain perfectly listless and immoveable for hours.

The general size is that of the last described; and its height, when erect, is about two feet nine inches. The fur on the upper parts of the body is of a deep blackish brown, very glossy on the back and outer sides of the limbs; while that of the belly, inner surface of the limbs, and beneath the tail, is reddish yellow, or dirty yellowish white, glossed with a slight golden tint. Its prehensile tail is much developed.

The Horned Monkey.

Cebus fatuellus, *Illiger*. (*Fig.* 4.)

A living specimen of this grotesque animal in the king's menagerie at Paris enabled M. Brisson to become its first describer. Another healthy individual was in the same collection in the year 1820, which has been particularly described by M. F. Cuvier. It has obtained the name of Horned monkey, not from possessing those appendages usually denominated horns, but from two tufts of hairs which bear that resemblance, and which rise immediately above the ears. The hairs of the forehead, in fact, instead of being directed



backwards, as is usual in all animals, rise vertically, and thus forms what M. Cuvier terms a *bandeau;* and at each extremity arises one of the above-mentioned tufts of hairs, which are much longer than the rest. In the season of winter, when the fur of the animal is longest, these tufts become very prominent; but they do not appear in the young animal, until it has cut the canine teeth. In confinement, this species is said to be mild and affectionate.

The exact size has not been stated, but it is rather above the middle-sized monkeys. The prevalent colour is a very dark brown, nearly black on the head and limbs, and somewhat lighter on the shoulders; the cheeks are surrounded by a narrow line of white hairs, which meet at the chin; the face, and all the naked parts, are violet.

The Widow Monkey.

Callithrix lugens, *Geoff.*

This rare and pretty little animal has been compared, and not unaptly, to a diminutive black dog with a white face. Its whole colour, in fact, is of a uniform shining blackness, with the exception of the face, neck, and arms, which are dull white; the former being surrounded with a narrow band of pure white. This remarkable disposition of colour has obtained for it, from the Creoles, the fanciful name of the Widow monkey; the whiteness of the face, neck, and arms being compared to the veil, handkerchief, and gloves worn in its native country by widows. It is described as particularly gentle and timid, except when a small bird,

its natural food, is placed in its sight; it then becomes animated and eager, darts at it like a rat, and devours it in an instant: at other times it will remain motionless for hours, attentively watching whatever is going on. It seems, however, to have a particular aversion to its hands being touched, since they are immediately withdrawn and hid under its belly. It evinces a great dread of other monkeys, but not those of its own species. Of its native history we are entirely ignorant.

The usual length of the body is not more than one foot. The head is round, the muzzle short, and the general expression of its physiognomy is agreeable. The colours we have already noticed. The nose is short and flat, and the ears are almost naked; the hands are nearly white on the outside, but black within; and the hinder hands, or more properly the feet, are entirely black; the tail is also black, and a little longer than the body.

The Squirrel Monkey.

Callithrix sciureus, *Cuv.* Simia sciureus, *Linn.* Carmiri, *Buffon.* Titi, *Humboldt.* Squirrel Monkey, *Pennant.*

The golden yellow or reddish colour of the fur, or probably the size and activity of the animal, may have occasioned this pretty little monkey to be likened to a squirrel. Its physiognomy has been termed infantine, having an expression of innocence, and as sometimes exhibiting the same rapid transition from joy to sadness. "If it cannot laugh—the peculiar faculty of man—it can weep; since, when its fears are excited, the eyes become suddenly suffused with tears, and it seems to appeal only to the softer passions for impunity and protection;" it is, indeed, seldom to be irritated. All its movements are rapid, light, airy, and graceful. It has a habit of steadfastly watching the mouth of a person while speaking; and if it be allowed to sit on the shoulder, will frequently touch the lips, teeth, or tongue of its master. Like many of the small American monkeys, it is ex-

tremely fond of insects. During damp or cold weather, in a state of nature, or when several are confined in a cage, they crowd as closely together as possible, embracing each other with their arms and tails: this latter member, however, is not prehensile. Their great susceptibility to cold renders them, in fact, extremely difficult to be preserved alive; and they are very seldom brought to our misty islands. We have only once seen a living specimen, then in the possession of a lady at Leamington. Its native country is on the banks of the Orinoco.

Three-striped Monkey.

Aotus trivirgatus, *Humboldt.*

This is another of the interesting subjects first made known to us by the researches of M. Humboldt, who describes it as one of the most remarkable monkeys of South America. According to the account of this well-known traveller, its habits are completely nocturnal; wandering about only during the night, and retiring into hollow trees, or rather recesses, to sleep away the day. In captivity, it generally composes itself to rest at nine in the morning, and continues in that state until seven in the evening: if, during this period, it is awakened, it becomes melancholy, listless, and stupid, and seems to have much difficulty in opening its large owl-like eyes. M. Humboldt's figure, the only authentic one hitherto published, represents the animal dormant. No sooner, however, does the setting sun bring the return of twilight, which to him is his "opening day," than our little monkey becomes all life and impetuosity; he then commences his hunt, if unconfined, after small birds, insects, and probably fruits, since he shows no objection to the latter aliment in a state of captivity. This carnivorous disposition may probably account for the extreme difficulty with which this species is tamed. An individual in the possession of our traveller, and which he kept for nearly five months, could not be re-

conciled to captivity: it slept during the day, hiding itself in the darkest recess it could find: it seldom played with its master during its waking hours, but showed particular cleverness in capturing flies; and if irritated, it hissed and struck with its paw like a cat, the throat being at the same time inflated. Its voice, for so small an animal, is extremely powerful: at times, it is described as much resembling the howl of the American tiger or jaguar; and, at others, to be a kind of mew, accompanied by a disagreeable guttural sound.

The hair is grey, mixed with white, and glossed with a silvery lustre: the centre of the back is marked by a brown line; and on the head and forehead are three others, diverging, and of a black colour: the chest, belly, and under surface of the limbs are yellowish orange. The face resembles that of a cat, and is covered with blackish hairs: the eyes are very large, and the ridges of a bright yellow. The tail is bushy, and half as long again as the body, which measured nine inches a half.

The Hand-drinking Monkey.

Pithecia chiropotes, *Humb.* Capucin de l'Ormogue, *Ib.* Pithecia chiropotes, *Geoff.*

Of all the numerous monkeys of the New World, this, in the opinion of Humboldt, its first describer, makes the nearest approach to the human form; not so much, indeed, in its size, which is scarcely above the middle standard, but in the facial angle of its head being apparently much less than it really is, from the chin being hid in a long and bushy beard. "It is a robust, active, fierce, and untameable animal; when irritated, it raises itself on the hinder extremities, grinds its teeth, rubs the end of the beard violently, and darts upon the person who has excited its displeasure. In confinement it is habitually melancholy; it is never excited to gaiety, except at the moment of receiving its favourite food: it seldom drinks; but when it does, the operation is per-

formed in a very peculiar manner; instead of putting its lips, like other monkeys, to the liquor, or to the vessel which contains it, this species conveys it to the mouth in the hollow of its hand, at the same time inclining the head upon the shoulders. It is not easy, however, to witness this singular trait of character, since the animal is unwilling to satisfy his thirst when watched or likely to be observed:" as connected with this, it has been observed that it has an extreme aversion to its beard being wetted. In their native forests, the hand-drinking monkeys live only in pairs. The voice, which is seldom heard, is a disagreeable grunt.

The colour of the body above is reddish brown, and the hair is long and smooth: the forehead and crown are covered with long thick hair, directed forward, and parted above the eyes into two thick distinct tufts; this division is formed by a longitudinal line destitute of hair: the beard is long, thick, and bushy; and the canine teeth are of an enormous length and size. The tail is not so long as the body, bushy, and deep brown.

The Black-headed Monkey.

Pithecia melanocephala, *Geoff.*

This, like the last, must be enumerated among the more remarkable monkeys of the New World, from all of which it is to be immediately distinguished by the extreme shortness of the tail; a structure which would seem to make it the representative of the baboons of the Old Continent. It is, in fact, the only one hitherto discovered in America, whose tail does not exceed three inches in length. It is altogether a small species; that described by Humboldt measuring little more than one foot five inches from the head to the feet; in its adult state, however, it is described as reaching the length of another foot. Its disposition is inactive, phlegmatic, but very docile. It eats with avidity all sorts of fruits, sweet or sour: these it will seize by stretching out both its hands at once, bending the back and body

at the same time in a forward attitude, as represented in the figure given by Humboldt.

The physiognomy has a much more human expression than that of the generality of monkeys, particularly in the face, which is naked and black: its profile is not much unlike the Ethiopian; the head is oval, but flattened on the sides: on the eyelids, mouth, and chin there are a few stiff hairs, but the chin has no beard: the ears are large, and, like those of the human subject, are naked. The fur is long, shining, and of a nearly uniform yellowish brown colour over the whole of the body. The fingers are much lengthened; the nails rather flat; and the tail, notwithstanding its shortness, is thick, and almost naked towards its extremity.

The Little Striated Monkey.

Jacchus vulgaris, *Desmarest.* Simia Jacchus, *Linn.* Hapales Jacchus, *Illiger.* Striated Monkey, *Pennant.*

This pretty little monkey, the most common of all those which are brought from Tropical America, not only endures the variable temperature of the European climate, but has been known even to give birth to its offspring under the careful management of the Parisian keepers. M. F. Cuvier has given us an animated and interesting account of this circumstance, from which the following particulars are taken. — On coming into the world, the young had their eyes open, and their skins were covered with very smooth hair, of a deep grey colour, but which was scarcely perceptible upon the tail. They instantly attached themselves to the mother, embracing her closely, and hiding themselves in her fur. Prompted, however, by that most unaccountable and unnatural instinct, which the rabbit and some other animals in a state of confinement so frequently exhibit, the mother, in the present instance, was impelled to destroy one of its offspring, and she actually ate off its head before the poor little thing began to suck. The two others (for there were three in the litter) took to

the breast; and this act seems to have destroyed the monstrous and perverted feelings of the mother, as from that moment she bestowed upon them the natural affection of a parent. The father also joined her in her cares; for, when the female was fatigued by carrying the little ones, she would approach the male, sending forth a gently plaintive cry. He seemed perfectly conscious of her meaning, for he would immediately hasten to relieve her: taking their offspring gently in his arms, he would place them upon his belly or upon his back, where they seemed to cling with perfect security; and in this manner he would carry them about until they again wanted an infant's food. This was constantly repeated: the father, in short, seemed to take nearly all their burthen upon himself, while the mother merely gave them support. Unfortunately, however, this interesting scene was cut short by the death of both; originating in the mother losing her natural supply of food. Every attempt was made to rear the little strangers by hand, but without success. Although, from its diminutive size, and facility of living in confinement, the striated monkey is a favourite with many, it seems incapable of affection, even to the hand that feeds it. It mistrusts all; and menaces indifferently those whom one would think it well knew, and those who are strangers. Neither does it show much intelligence, although it is attentive and suspicious of every thing which is passing. When under the influence of fear, it strives to conceal itself, uttering a short but piercing cry; at other times it hisses. In confinement, it has been stated, that these individuals exhibited but little vivacity or agility of motion, and that they use much precaution in ascending and descending in their cage: it is thence inferred that the striated monkey is much inferior, in point of activity, to the squirrel. This inference, however, is perfectively deceptive. We have personally seen this animal in its native forests: it lives only among the loftiest trees, and always in societies of six or seven. So rapidly do they bound from branch to

branch, and from tree to tree, that the eye cannot follow them; they appear, in short, to fly; and when thus scouring the forests, it is totally impossible for the hunter to take aim at them with his gun. To us, their movements seemed far superior in swiftness and elasticity to that of the squirrel. It is known among the Portuguese by the name of *Sanglinu*. Edwards says of one individual that belonged to a Mrs. Kinnon, "formerly midwife to the Royal Family," (this was in 1758,) — "that once, when let loose, it suddenly snatched a Chinese goldfish out of a basin of water, which it killed and greedily devoured; after which she gave him small live eels, which frightened him at first by their twisting round his neck, but he soon mastered and ate them."*

The size is about that of our squirrel. On each side of the head, and round the ears, is a tuft of long white hair, standing out in a remarkable manner; the rest of the face and head are black: the hair of the body is darkish brown, with deeper transverse shades; each hair being dusky at its root, reddish in the middle, and tipt with grey. The tail is very long, bushy, and alternately annulated with light ash-coloured and black rings. The head is very small, and the face of a dark flesh colour.

The Silky Monkey.

Midas rosalia, *Geoff.* (*Fig. 5.*)

This, perhaps, is the most beautiful of all the little monkeys brought from Brazil; yet, although by no means uncommon in its native country, it is so much affected by the ungenial climate of Europe, and its existence is so frequently terminated by the humidity and coldness of our winters, even with the most scrupulous care, that it seldom survives the change many months. Its delicacy of constitution is extended to its habits under confinement, which are described as unusually neat and clean.

* Edwards's Gleanings, p. 218.



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Naturally gregarious, like the striated monkey last described, they cannot live alone. The most certain means of preserving them is in pairs, particularly if of opposite sexes. They show a liking for milk, boiled rice, Indian corn, &c.; but prefer ripe fruits, as more in unison with their natural food. The individual described by M. F. Cuvier as then in the Paris managerie, would conceal himself when in the least frightened, and express his fears by a prolonged hissing noise. He loved to receive caresses, yet never returned them; and although he testified some affection for those who attended him, it was always mixed with a lurking mistrust, or more probably fear. He would come when called by those he knew, but avoided and chattered in anger at all strangers. As in his native state he preferred tops of high trees, so in confinement he always remained at the top of his cage. When descending, which was done but rarely, he always climbed down backwards: he never walked upright, and his tail was always pendent. We have occasionally seen this pretty little species in small parties in the forests of Brazil, — where their manners seemed to resemble those of the striated monkey,—bounding with incredible rapidity from tree to tree, uttering sharp but weak cries of alarm, and apparently dispersing at the first appearance of strangers.

The silky monkey scarcely measures, in total length, two feet, of which the tail alone occupies one. The whole of the hair is of a bright yellow colour, resembling yellow silk, and is of a very fine, soft, and long texture: round the face it is much lengthened, and thus forms a mane, not unlike that of a lion in miniature; near the

face this mane is of a reddish colour, but as it recedes from the cheeks it becomes paler ; and the face itself, as also the hands and feet, are of a dusky purple. The ears are round and naked ; the claws are small and sharp; and the tail rather bushy at its extremity. The gloss upon the fur is particularly rich when held in the sun.

The Slow-paced Lemur.

Stenops tardigradus, *Illiger*, Lemur tardigradus, *Linn.* Loris tardigradus, Nycticebus tardigradus, *Geoffroy.* Nycticebus Bengalensis, *Desmarest.*

This is, perhaps, the best known species of the very singular group of animals we shall now notice : it is certainly, at present, the most interesting, from its manners having been detailed by several agreeable writers. From these we shall select that from the pen of sir William Jones, as being written with that elegance and taste which distinguishes all the productions of that great man. " The manners of my little favourite," observes sir William, " were for the most part gentle, except in the cold season, when his temper seemed wholly changed. His Creator, who made him so sensible of cold, to which he must have been often exposed in his native forests, probably, for this reason, gave him a thick coat of fur. To me he was at all times grateful ; but when I disturbed him in winter, he was usually indignant, and seemed to reproach me with the uneasiness he felt, although every possible precaution to insure him warmth was taken. He was at all times pleased with being stroked; but his temper, which was usually quick, was so irritable under the effects of cold, that he would then become, if repeatedly disturbed, quite fierce. From a little after sunrise until sunset he rolled himself up like a hedgehog, and slept without intermission. So soon as he awoke, his first occupation was licking and dressing himself like a cat; after which he took what was to him a breakfast, consisting either of bananas, mangos, or some other native fruits : milk he lapped eagerly, but

was usually contented with plain water. When the sun was quite set, he became amazingly active. He was more especially fond of grasshoppers; and passed the whole night, in the heat of summer, in prowling after them. When one of these insects alighted within his reach, his eyes immediately kindled with uncommon animation, and drawing himself back to spring on it with greater force, he seized the prey with both his paws, and held it in one while he devoured it. For other purposes he would sometimes use all his paws indifferently as hands. The posture of which he seemed fondest was to cling with all his four feet to the upper wires of his ample cage, his body being inverted: in the evening he usually stood erect for many minutes, playing on the wires with his fingers, and rapidly moving his body from side to side, as if he had found the utility of exercise in his unnatural state of confinement. A little before daybreak he seemed to solicit my attention, and if I presented my finger to him, he licked or nibbled it with great gentleness; but eagerly took fruit when I offered it, though he seldom ate much at his morning's repast. When the day brought back *his* night, his eyes lost their lustre and their strength, and he composed himself to profound sleep. My little friend," concludes sir William, " was, on the whole, very engaging; and when he was found lifeless, in the same posture in which he would naturally have slept, I consoled myself with believing that he had died without pain, and that he had lived with as much pleasure as he could have enjoyed in a state of captivity." A living specimen in the menagerie of the Zoological Society has furnished some additional traits in its character. " In its motions it is excessively slow and languid. When on the ground its posture is constrained, and apparently unnatural, and it rather drags itself along than walks. On a tree, or in mounting the bars of its cage, it seems more at ease, yet still moves with slow and cautious regularity; grasping a branch or a bar lightly with one of its fore paws, it gradually fixes the other, and then advances its hinder

hands with equal slowness and precision, never quitting its hold with the one until it has ascertained the firmness of its grasp with the other."*

In its dimensions this curious animal is about the size of a small cat, but it is entirely destitute of any tail. Its body is completely covered, except upon the face and paws, with long, close-set, woolly hair, of an elegant pale brown or mouse colour: the eyes are yellowish brown, very large, and so extremely prominent, as to appear in the living animal like perfect hemispheres; they are surrounded by well defined circles of dark brown, which are united above the nose, and are not unlike a pair of spectacles; these circles are connected with a band of the same colour, which is continued along the centre of the back.

The Red Lemur.

Lemur ruber, *Péron* and *Le Sueur*, *Geoffroy*. Maki roux, *F. Cuvier*. (*Fig. 5.*)

The two indefatigable naturalists, MM. Péron and Le Sueur, who accompanied one of the French circumnavigating expeditions, were the first to bring home a skin of this very rare animal. Mr. Griffiths notices another specimen formerly in Bullock's Museum, and a living individual seems to have been once at Exeter Change, and more recently another has been recorded as belonging to the Zoological Society. It appears, therefore, not to be a species of unusual rarity, even in this country. The French menagerie seems to have had it more than once, and it is consequently figured and described in the valuable work of M. Fred. Cuvier. Notwithstanding, however, these many opportunities of attentively observing and recording its peculiar traits of character, at least in confinement, our materials are poor and scanty. Mr. Griffiths, alluding, perhaps, to the specimen he saw alive, observes, that it is easily tamed, and of a gentle disposition; but, notwithstanding its great

* Zool. Gard. vi. 144.

agility, it is habitually melancholy and sleepy. It passes the day rolled up, with its head between its legs, and seems never to awake, except at the call of hunger.* The manners of that now living (1830) at the Zoological menagerie have been described, in a general way, as similar to most other lemurs. "In captivity they are generally good tempered, but do not exhibit much playfulness or intelligence; after a time, however, they become familiar with those who have the care of them, towards whom they will sometimes evince a considerable degree of affection. Fruits and roots form the principal part of their nutriment; but dressed meat, or even raw fish, appear to be not unwelcome additions to their vegetable diet. Notwithstanding the thickness of their coats, they are extremely chilly, and are very fond of basking in the sun, or couching by the fireside. In walking or leaping they usually raise their long bushy tails above the level of their backs; but when at rest, they either suffer them to hang down, or coil them round their bodies to retain the warmth." †

In size, this species measures, in total length, more than four feet; but the body alone is not quite half this length. Its general colour above is bright rufous brown, while that beneath is deep black: the face and paws, which are naked, and the long bushy tail, are also of a deep black: the neck is marked above by a large oval white patch, which, from the figures published, appears to advance nearly round the neck in the shape of a collar. The hair of the body and of the tail is extremely long, soft, and woolly.

The White-fronted Lemur.

Lemur albifrons, Maki Angouan, *Geoffroy, Audebert.*

By the observations of M. Fred. Cuvier, made at the French menagerie from the living animals, it appears to us completely established, that the female of this

* Griff. Cuv. i. 325. † Zool. Gard. vi. 148.

species differs from the male in having those parts deep grey, which in the other sex is white. Like all the other genuine lemurs, this remarkable species inhabits the forests of Madagascar ; but nothing has yet reached us relative to its natural history. In speaking of the female, which brought forth and suckled its young at the Garden of Plants, M. Fred. Cuvier observes, that the mother had been remarkable for her gentleness and familiarity previous to this event, for she would constantly approach to receive the caresses and lick the hands of her visiters. But after the birth of her young one, she became suspicious, avoided observation, and even menaced those who came near her. In proportion, however, as her maternal cares ceased to be necessary, this mistrust subsided, and she gradually, towards the end of the third month, regained her former gentleness and familiarity. It was curious, during the latter part of this time, to watch the timidity of the young one, who now would occasionally quit its mother, and move about the cage by itself ; but the slightest noise, or the appearance of a stranger, would prompt it immediately to seek the only security it knew of, and it hastened to take shelter, and almost hide itself, in the warm fur of its mother.

The colour of the male (which is the *Angouan* of Geoffroy), is of a grizzled brown, tinged with reddish, becoming nearly black on the hinder part of the head. The face and ears are encircled by a broad white band of woolly hairs which meet across the forehead ; and this white colour extends to the neck and inner sides of the fore legs : the muzzle and paws are purplish black : one third of the tail, towards its extremity, is also black ; the rest resembling the colour of the body. In the female, which seems to be the *Lemur collaris* or *Maki d'Anjouan* of Geoffroy, the sides of the face are iron grey, and the general colour somewhat lighter.* There appears, however, to be still some confusion on this

* Zool. Gard. x. 300.

subject, which can only be cleared up by a personal examination of the original Parisian specimens.

The Woolly Lemur.

Lemur laniger, Lemur Mongooz, *Linn.* Mongous, *Buffon.* Mongooz, *Edwards.* Woolly Macaco, *Pennant.*

This animal seems to have been known in our menageries since the time of Edwards, who, in his valuable *Gleanings of Natural History*, printed in 1758, gives a very good representation of a living individual "then in the house of the obliging Mrs. Kinnon, midwife to her Royal Highness the Princess of Wales, who invited me," says Edwards, "to take a drawing of it." Authors describe it as a very inoffensive and remarkably timid animal, easily tamed, but not capable of much attachment. It is, like most other lemurs, partly nocturnal, sleeping during the greatest part of the day, rolled up into the shape of a ball; the tail passing between the hind legs, and finally round the neck. Awkward and feeble when walking upon the ground, these animals, like monkeys, seem peculiarly formed for climbing and jumping: they are said to make prodigious bounds, frequently leaping ten feet from the ground; and they will traverse all parts of a tree with astonishing celerity. In their actions, likewise, they show a considerable resemblance to the lesser monkeys: they use their hands to convey food to the mouth, in the same manner; and also drink by suction. When tranquil they grunt feebly; but when frightened or otherwise moved they are said to roar in concert, and to produce an insupportable noise. When two individuals are accustomed to each other in confinement, they appear to get on very well and very lovingly together, living in peace and sleeping together in a mutual embrace; but if they are strangers, a desperate fight ensues. M. Fred. Cuvier had two pairs not accustomed to each other; and whenever he removed the partition which separated their cages, they were seized with unaccountable fury: on those occasions they

uttered sharp and quickly repeated cries, and, but for the intervention of the iron bars of the cage, would have done each other serious injury. Their mutual affection is expressed in an odd manner, by scratching and cleaning each other's feet with their teeth.

The usual size is rather less than that of a small cat. The head is shaped much like that of a fox, and is entirely covered with hair, which is black round the eyes; and this colour forms a line joining to the tip of the nose, which is also black; between the nose, however, and the eyes there is a space of pure white; the cheeks and sides of the face are also whitish: all the upper parts of the body and limbs are dark brownish ash-colour; the under, white. The tail is longer than the body, and the hair thick, woolly, and soft.

The Ruffed Lemur.

Lemur Macaco, *Linn.* Vari. *Buffon.* Ruffed Lemur. *Pennant.*

This seems to be a species subject to much variation in point of colour. Edwards describes an individual, then living in London, as entirely of a deep black colour; while we possess a beautifully preserved skin of another individual, sent from Madagascar, which is entirely patched with large black and white spots; thus agreeing with all the specimens we have yet seen. Buffon describes this as a fierce and almost untameable species; an assertion altogether without proof, and highly improbable. Our own veracious Edwards, on the contrary, assures his readers that it is "a very sociable, gentle, harmless-natured animal, without any of the cunning or mischievousness of the monkey kind."* This species, however, is chiefly remarkable for the astonishing power of its voice, which is said to be so loud and dreadful as to strike astonishment into those who hear it, resembling, in this respect, the howling monkeys of South America. The French natural biographer, ever prone to catch hold of a theory, no doubt concluded,

* Edw. Glean. p. 217.

that an animal which could howl much louder than a bear was, of necessity, a most fierce and formidable creature. When feeding, it sits up like a monkey, holding its food in its hands.

The size of the specimen examined by Edwards, was that of the smaller sort of house cat; the tail was longer than the whole body, and the whole animal of a deep black.

The Ring-tailed Lemur.

Lemur Catta, *Linn.* Mococo, *Buffon.* The Maucauco, *Edwards.* Ring-tailed Macauco, *Pennant.*

The ring-tailed lemur is confessedly by far the most elegant of the whole tribe. It seems also to be a rare animal, at least in our menageries, since it does not yet appear in the collection of the Zoological Society. Edwards has given a very accurate figure and description of an individual which was brought from Madagascar by his friend captain Worth, and which Edwards "kept alive at his house for some time." Independent of its rarity and beauty, its character is particularly confiding and affectionate, while its motions are described as having an ease and elegance surpassing almost every other quadruped. In their native state, these animals live in societies, and are seen in troops of thirty or forty together in the woods, where they feed principally upon fruits. In captivity it delights in sunshine, and in sitting before a fire: its general attitude at such times is similar to that of a squirrel when feeding, sitting upright, and often extending forwards its spread hands. The palm of the hand is stated to possess a peculiar organisation; it is extended by a straight line concealed under the hair as far as the middle of the arm, where it appears uncovered: by means of this, when the arms are extended, the fingers necessarily close; and this accounts for the facility with which these animals suspend themselves from the branches of trees.* Its *pur* is not

* The singular formation of the arm, above stated, is deserving of great attention, not merely as an isolated fact explaining the habits of this par-

unlike that of a cat; to which its general size may be compared.

The colouring of the ring-tailed lemur is peculiarly elegant. The face is deep black and pure white; the first colour forming a broad ring round each eye, and covering the muzzle and the forehead, while all the rest of the head, ears, and cheeks are white: the back and sides of the body are reddish ash-colour, but the outside of the legs are of a lighter grey: all the under parts are white. The tail is very long, and elegantly ringed with black and white, the colours being alternate. The hair of the whole body is very soft and delicate to the touch, rather standing erect like the pile of velvet, than lying down sleek. Edwards remarks, that when it plays, "it uses a sort of galloping, with its tail raised over its back."

The Dwarf Lemur.

Scartes murinus, *Nob.* Otolicnus pusillus, *Illiger.* Lemur murinus, *Gmelin.* Little Lemur, *Brown.* Rat de Madagascar, *Buffon.* Little Macauco, *Pennant.* Maki nain, *Cuvier.*

Although our countryman Peter Brown figured this pretty little animal from a living specimen then in England, it does not appear to have fallen under the subsequent observation of any of our own naturalists. M. Fred. Cuvier, however, has supplied some very interesting particulars regarding one which lived in the Garden of Plants, and from whose account we shall now extract a short notice. Like others of its family, the dwarf lemur is completely a nocturnal animal. He passed the

ticular animal, but in connection with those wonderful and beautiful analogies by which beings the most opposite in form are yet obviously made to represent each other. We have not yet had an opportunity of examining into the correctness of this statement, nor does Mr. Griffiths state from what author he has taken it; but, presuming upon its correctness, we feel not the slightest doubt that the arms of the other lemurs will be found exhibiting a similar structure, and that therefore this family, in all probability, represents the family of *Mantidæ* among the *Ptilota*, or insects, and the mantis-like crabs among the *Crustacea*, in the next circle of Apterous insects.

whole of the day in a warm nest of hay, rolled up, and in profound slumber. Towards twilight, however, he awoke; and so soon as it was dark he sallied from his retreat, and continued in active motion until morning. He would traverse his cage with a rapidity similar to the flight of a bird, and leap vertically from the ground to the height of six or eight feet; his power of springing, indeed, is very great. As a proof of the perfect sight enjoyed by this animal, and no doubt by all the nocturnal lemurs, even in total darkness, M. Cuvier mentions the fact of two of them, having escaped from their cage, traversing the room, which was filled with a crowd of other cages and animals, and re-entering by the little hole whence they had escaped: this they did without suffering the least accident, though in profound darkness,—all the window-shutters being closed. Pennant says that it eats and holds its food in its fore paws, in the manner and attitude of a squirrel.

The specimen figured by Brown was less in size than a rat; the ordinary length appears to be from ten to eleven inches. The fur is thick, soft, and silky. The upper surface of the body is of a uniform greyish fawn-colour, and the under parts are white; the face and paws being flesh-coloured: between the eyes there is a longitudinal white spot, bordered on each side with a shade of black. The ears are large, roundish, and naked; and the tail of the same length as the body.

The Barbastel Bat.

Plecotus Barbastellus, *Geoff.* Vespertilio Barbastellus, *Gmelin.*

The family of bats, although very extensive, and possessing many species of much popular interest, seems to be less capable of confinement or of domestication than almost any other race of quadrupeds. They appear, in short, almost destitute of any artificial improvement,—remaining in slumber during the day, and only exercising their physical powers when mankind are asleep; hence it is that we seldom see these animals in

menageries, where, indeed, from the impossibility of exercise, and of taking their natural food, they seldom live for any length of time. Our notices on this singular race of animals will, therefore, be brief, and confined to two species.

The manners of the Barbastel have been well illustrated by M. Fred. Cuvier, who seems to have kept one alive for a short time. Upon first being taken, it was shut up in a glazed press, furnished with several shelves, all of which it traversed, passing through the smallest passages, and at length retired into the most obscure corner. When the animal stood, the entire sole of its foot, its wrist, and its thumb, were placed upon the ground; the other fingers were raised in a contrary direction to the fore leg; a position by which they were prevented from rubbing against the ground: the tail was bent underneath, and the membrane which enveloped it was folded so as only to occupy the least possible space. In walking, the limbs moved alternately, as in other quadrupeds, but the fingers generally remained united as when the animal stood. Like other bats, it slept suspended, with the head downwards. To accomplish this, after finding a suitable place, it would fix its thumbs where the nails of its hinder feet should be hooked, and for this purpose the slightest inequality was sufficient; it would then detach one of its thumbs, and turning its body, would bring the hind foot of the same side to the spot which the thumb had just occupied: the nails being properly fixed, it would let go its other thumb; and this movement, by leaving the body to its natural weight, carried the head downwards, and brought the second foot close to the first, where it became hooked in the same manner. When desirous of flying, if it was resting upon a horizontal surface, it would make a perpendicular spring, and suddenly extend its wings; but if it was suspended, it would quit its hold, and unfurl its wings while in the act of falling. This little prisoner thus continued to afford matter of speculation to its learned master for eight days, without

taking any nourishment; until at last, in full daylight, it fell upon a plate of chopped meat, which it had hitherto neglected, and devoured the whole. When a piece was too large, it would fix it to the ground with its wrist, and cut it with its side teeth; but if these teeth got engaged with the meat, or any morsel adhered to them, it would not use its feet to get rid of the embarrassment, but would seek for some projecting spot, against which it would rub its muzzle. Cleanliness appeared a very peculiar characteristic of this animal: with its hinder feet it would rub all the parts of its body; and cleanse its nails, fingers, and the membrane forming its wings, very dexterously with its mouth: the motions of its head indicated quickness and vivacity. It seems, however, notwithstanding its hearty meal of chopped meat, to have died soon after. The Barbastel bat, although found both in France and Germany is unknown in England.

The total length is about two inches, and its extent nearly ten. The fur of the upper part of the body is dusky brown; the under part ash-coloured. The ears are remarkably broad and long, so that the lower part of the inner sides touch each other, and nearly conceal the face, when viewed in front: the nose is short, the cheeks full, and the end of the nose is flattened.

The Javanese Vampire.

Pteropus Javanicus, *Horsf.*

It would be as useless, as it is perhaps impossible, to trace which was the particular species of bat termed by Linnæus and his followers the Vampire, since it appears to have been applied, with little discrimination, to all those very large species termed by the French Rousettes, which inhabit the hot latitudes of India and America, and derive much of their nourishment from sucking the blood of other animals. The explanation of the word Vampire, however, is interesting, and has thus been given by Dr. Shaw.—"A vampire," observes the doctor,

" is an imaginary monster, supposed to suck the blood of sleeping persons. It also alludes to one of the most absurd superstitions that ever entered into the human mind. About the year 1732, an idea arose among the vulgar in some parts of Poland and Hungary, that certain bodies, when interred, became possessed of the power of absorbing blood from those who were so unfortunate as to pass over or to stand near their graves: it was therefore supposed necessary to disinter such bodies, and wound them with a sword; by which means this pernicious power was supposed to be put a stop to, and the blood they had so unjustly gained was evacuated. Astonishing as this folly may appear, it is yet more astonishing that a great many treatises were written on the subject, and that some considerable time elapsed before the superstition was completely destroyed."

The Javanese vampire appears to have been once in the possession of Mr. Cross, the very respectable and intelligent proprietor of the menagerie at Exeter Change; since we possess a sketch, by Howitt, drawn from a living specimen seen there by the artist. Dr. Horsfield, in his valuable work on the animals of Java, gives us some interesting particulars of its habits in a state of nature, which we shall here condense. It may be premised, that this is one of the largest bats yet discovered, being no less than one foot long, and covering an extent, when its wings are spread, of more than five feet. In its habits it is completely gregarious, uniformly living in society. Numerous individuals select a large tree for a resort, where they suspend themselves from the naked branches, often in companies of several hundreds, and present a most singular spectacle. During the greatest part of the day they are asleep: at such times they are ranged in succession, in rows, with the head downwards; and, being in close contact one to the other, they have so little resemblance to living beings, that a stranger would readily mistake them for a part of the tree, or for a fruit of uncommon size suspended from the branches. In general these societies, during the day,

preserve a profound silence; but if they are disturbed, or a contention arises among them, they emit sharp piercing shrieks, while their awkward attempts to extricate themselves, when oppressed by the light of the sun, exhibit a ludicrous spectacle. In consequence of the sharpness of their claws, their hold is so firm, that they cannot easily loosen themselves without the assistance of their wings; and if suddenly killed in their hanging position during the day, they continue suspended after death. Soon after sunset they gradually awaken, quit their hold, and commence their nocturnal flight in quest of food. By an unerring instinct, they direct their course to the forests, villages, and plantations, attacking and devouring indiscriminately every kind of fruit; thus occasioning incalculable mischief. So great, indeed, is the devastation they inflict upon the orchards and gardens, that the European residents find it necessary to secure the fruits by different artifices. The more delicate sorts, such as mangos, jamboos, lausas, &c., as they approach to maturity, are ingeniously secured by means of a loose net or basket, skilfully constructed of split bamboo: without these and other precautions, little or no fruit would escape these depredators.

The flight of these animals is also curious. There are few situations in the lower parts of Java where this night wanderer is not constantly observed. As soon as the light of the sun has retired, one animal is seen to follow another at small but irregular distances, and this "long-drawn file" continues uninterrupted until darkness obstructs the view. Their flight is slow and steady, pursued in a right line, and capable of long continuance. The colonists and inhabitants occasionally form shooting parties for the destruction of this animal, during moonlight nights, which in this climate are uncommonly serene: he is watched in his descent to the fruit trees, and a discharge of small shot readily brings him to the ground.*

The size has been already mentioned. The general colour is blackish, with the upper part of the neck yel-

* Horsf. Zool. Researches.

lowish chestnut, and the fur of the back slightly varied with white: the colours, however, are subject to variation; Dr. Horsfield describes a variety wherein there is a collar of a lighter brown, inclining to chestnut, and extending entirely round the neck. The head, from the figure given by Dr. Horsfield, has a much greater resemblance to that of a sheep than to any of the true bats; the muzzle is much prolonged; and the ears, in comparison, are very small.

The Russian Desman.

Mygale Muscovita, *Cuv.*

Of the desman, or, as it has been called by Pennant, the Musk Shrew, it is now ascertained that two species have been confounded under one. The original species is now designated after its native country, Russia; while the second, which seems to have a much more limited range, has hitherto been found only at the foot of the Pyrenees, near Tarbes. The habits of the Russian desman are so essentially aquatic, that it is not adapted to live in ordinary menageries; yet it might very well be introduced in such inclosed parts of the Garden of Plants as contain ponds, or in the Zoological Gardens.

The Russian musk shrew passes the greatest part of its life either in or beneath the water, never choosing a dry place of residence; and if they proceed from one pond to another, they generally do so by forming a subterraneous passage, or by passing along ditches which connect both. Although they inhabit, generally, the sides of ponds, lakes, and stagnant water, they seem to evince a decided preference for low inundated grounds, surrounded by banks, as it is in these latter that their burrows invariably occur. Their mode of constructing these habitations is curious: they make an entrance to the intended burrow under the water; from this point they dig on in a slanting direction upwards, elevating their work, by degrees, in multiplied and lengthened windings, which sometimes are so extended as to occupy

on extent of more than twenty feet. They live, however, only in that part of the burrow which is under water. During winter it seems that they do not become torpid, — a circumstance which is said to expose them to inevitable and serious evil. The ice, which in their native country lasts for so long a period, imprisons them under water, and it would appear that they then endure a state of the most cruel torment; for, if there are any fissures or holes through which they can respire, they run thither to thrust out their proboscis; but should they fail in this, they can only exist on the small quantity of air contained within their burrow. A trifling number thus survive; but the others perish by suffocation. Their attempts to release themselves, which we have just noticed, are more numerous in proportion to the duration of the cold season.

The foregoing account we met with in Mr. Griffiths' ingenious compilation, without any allusion to the authority from which it is derived. It may be generally correct; but nature, or rather a merciful Providence, has never made "cruel torment" to be the condition of existence to any one of its creatures. That many individuals may suffer in the manner and from the causes described, during winters of uncommon severity, is very possible; but that by far the greater part survive, is more than probable. Their burrows are stated to spread over a very wide surface; and it is clear that those parts which the animal does not inhabit, are appropriated to lay in stores of food for the winter. So far, then, we see only the same benevolent gift of instinct, and the same powers granted for resisting the effects of winter, as is so generally given to the mouse family: the air, and the food, contained in their dwellings, we should consider quite sufficient for the ordinary wants of nature; and so far from the desmans being condemned to "cruel torments," we should rather fancy they would be very warmly and comfortably housed in their winter quarters.

The Shrew Mole.

Scalops Canadensis, *Cuv.* Sorex aquaticus, *Linn.* Musarayne-taupe, *Cuvier.* Scalope de Canada, *ditto.* Brown Rat, *Pennant.*

This curious American animal, which closely resembles the European mole, not only bears confinement, but seems to become, under a kind master, a very domestic little creature. Dr. Richardson *, on the authority of Dr. Godman, particularly alludes to one which was domesticated by Mr. T. Peale of Philadelphia: it devoured considerable quantities of fresh meat either cooked or raw, drank freely, and was remarkably active and playful. The eyes, like those of the mole, are so extremely minute, that Dr. Godman positively says that, in the fresh animal, the aperture in the skin is just big enough to admit the passage of an ordinary human — hair! Yet, notwithstanding this deprivation of sight, Mr. Peale's favourite would follow the hand of its master; an exquisite sense of smell supplying the want of vision. It was fond of burrowing for a short distance in the loose earth; and after making a small circle, would return for more food. When engaged in eating, it employed its flexible snout in a singular manner to thrust its food into the mouth, — doubling it so as to force it directly backwards. In a state of nature, these animals are most active early in the morning, at mid-day, and in the evening. They are well known to have the remarkable custom of coming daily to the surface *exactly at noon;* at such times they may be taken alive, by thrusting a spade beneath them and throwing them on the surface. In their general habits they resemble the common European moles, — leading, like them, a subterraneous life, forming galleries, throwing up little hillocks, and feeding principally on earthworms and grubs.

The length is rather more than seven inches. The fur resembles that of the common mole, and is nearly of a uniform brownish black.

* Northern Zool. i. 12.

The European Brown Bear.

Ursus Arctos, *Linn.*

It appears singular that a family of animals like the bears, which not only endure confinement, but thrive and sometimes grow enormously fat under the restraint of man, should nevertheless continue to preserve their savage disposition and manners, in nearly the same degree as when in a state of nature, even after years spent in unavailing efforts to domesticate them. It may be said, indeed, that this is in part accomplished, by their having been taught to dance; and so far the objection is not valid; but it must be remembered, that even those which have been thus far tutored, or rather tortured, to perform such antics, are yet firmly muzzled. Nor have we ever heard of a bear, however docile under the rod of his keeper, so far trusted as to be allowed the free use of his mouth.

The different species of this group are among the most attractive subjects in the menageries. We shall therefore enumerate all those whose manners have been witnessed in a state of nature, or whose peculiarities in confinement are in any degree interesting. There appears to be about nine distinct species; six being distributed in the colder regions of Europe and America, while the remaining three have only been detected in the mountainous parts of India.

The European brown bear appears to have been formerly spread over the whole of Europe; but it is now confined almost entirely to the vast forests of Germany, Hungary, and Russia: from the latter empire, also, it spreads over the uncultivated wilds of Siberia; but whether the brown bear of Arctic America is identically the same species as they, may be reasonably doubted. The habits of this species in a state of nature are described as solitary, wandering about during the greatest part of the year, and retiring to pass the winter in such sheltered retreats as are afforded by the hollows of trees or the cavities of rocks. This season, in fact, is passed

in a state of lethargy, which lasts until spring, when the sexes meet but for a short time; the male abandoning the young entirely to the care of their mother. Formed to derive its sustenance both from the animal and vegetable world, the brown bear does not attack man unless provoked, or under an unusual and extraordinary pressure of hunger. It is remarkable for longevity; instances being upon record of individuals attaining to the respective ages of thirty-one and forty-seven years.

One of the most remarkable brown bears that have been of late years killed in Europe, is thus mentioned by major Hamilton Smith, who saw the animal preserved at Buda in Hungary, in which kingdom it appeared, about forty years ago, on the shores of the Danube. This animal was of an uncommonly large size, and had proved so destructive to the cattle, that every effort was made to destroy it: ordinary shot appeared to take no effect upon him; and, when hard pressed, he would swim to the other side of the Danube, and resume his depredations there, until he was chased back again. In this manner he was fairly hunted into Lower Hungary, having traversed most of his way by water. From Semlin he was chased beyond Belgrade, but the Turkish peasantry drove him back, and it was many months before he was killed. Besides the peculiarity of his excessive bulk, his colour was purplish, and several balls were found lodged in his skin. Although the bear is not uncommon in Hungary, the extraordinary colour and size of this individual excited so much curiosity, that he was stuffed and preserved at Buda.

An adult brown bear from the Alps has thus been described by M. Fred. Cuvier: — The body was covered with very thick, long, and rather soft fur, generally of a maroon brown, dark upon the shoulder, back, thighs, and legs, but tinged with yellow on the sides of the head, ears, and flanks: on the paws the hair became short and nearly black; as also on the muzzle, where, however, it retained rather more of the brown colour of the head.

Major H. Smith describes a remarkable European bear, which he saw at Dresden, and "which seems to be, if not a distinct species, at least a strongly marked variety. It was about four feet high at the shoulders. The physiognomy differed from that of the common bear; the ears were small and round, and the facial angle was greatly depressed at the junction of the nasal and frontal bones. The colour was a fiery yellow on the head and back, passing into chestnut and red on the sides and hams: the belly and paws were brown; and there was a dark streak upon the nose, spreading into branches towards the orbit."

M. Cuvier considers that the true distinction of the common or brown bear of Europe is in the form of its skull, the upper portion of which is always arched in every part; the forehead forming part of the same curve which runs from the muzzle to the occiput: it is arched also from right to left in the same style as in its length; and there is no clear distinction between the forehead, the middle portion of the parietal bones, and the temporal fosses. The sagittal crest only begins to be sensibly marked very near the occipital.

The following description of the brown bears in the Zoological Gardens enables us to bring together the most authentic accounts of this species, and which will serve as valuable points of comparison with what will subsequently be said of the American bears. "The fur is thick, long, soft, and woolly. In younger individuals, the colour is deep brown, with a tinge of grey on the body, which becomes nearly black on the legs and feet; while in the adult it is mixed with yellowish grey and fawn-colour, giving the fur a grizzled appearance. The forehead rises suddenly from behind the eyes, assuming a regular convex form" (as noticed in the preceding observations of M. Cuvier), "but not elevated to any great extent. The usual size of the adult is about four feet long, and two and a half high. The length of the head is about a foot, that of the fore feet eight inches, and that of the hinder feet something

greater, reckoning from the heel to the extremity of the claws; the latter are fully two inches in length, considerably curved, and nearly equal at either extremity." This was brought from Russia by the marquis of Hertford. Regarding another individual, *stated to be* a native of America, Mr. Bennett makes the following observations: — "It resembles the adult Alpine bear so closely in its form, in its fur, in its physiognomy, and in its manners, that we have little hesitation in referring it to the same species. Notwithstanding the wide difference in geographic position, we see no incongruity in such a union; on the contrary, it would strike us as a very peculiar and surprising fact, that so excellent a swimmer, and so essentially migratory a beast as the brown bear, should present almost a solitary exception to the general rule, which renders most of the animals inhabiting the arctic circle, common to the two continents." * It must, however, be remembered, that in this attempt to prove the brown bear of Europe and that of America to be the same species, the whole force of the argument rests upon the mere supposition that this young bear did actually come from America. This seems to be uncertain, and therefore nothing conclusive can be arrived at.

The Barren Ground Bear.

Ursus Richardsoni, *Swainson.* Ursus Arctos? Americanus, Barren Ground Bear, *Richardson, North. Zool.* i. 21.

The discovery of this bear, which, in all probability, is a distinct species from the last described, is due to the intrepid navigators under the command of captain Franklin and Dr. Richardson; and it has been described by the latter in the interesting and valuable volume on the Quadrupeds of British America, which is entirely from that gentleman's pen. We know not whether living specimens have as yet reached Europe; but as it is highly probable they will, we shall give Dr. Richardson's account nearly in his own words. "The barren lands,"

* Zool. Gard. iv. 106.

says this accurate observer, "lying to the northward and eastward of Great Slave Lake, and extending to the Arctic Sea, are frequented by a species of bear which differs from the American black bear in its greater size, profile, physiognomy, longer soles, and tail; and from the grisly bear also in colour, and the comparative smallness of its claws. Its greatest affinity is with the brown bear of Norway; but its identity with that species has not been established by actual comparison. It frequents the sea coast in the autumn, in considerable numbers, for the purpose of feeding on fish. They are frequently called White bears by the Indians and interpreters, probably from the circumstance of its long hair, during summer, frequently becoming very pale towards the tips. This bear resorts to the shore of the Arctic Sea in August, and preys indiscriminately upon animals and vegetables. Although much dreaded by the Copper Indians, who cautioned our travellers against these 'white bears' of the barren lands, all the individuals that were encountered, fled from the party at once. The Indians avoid burning bones in their encampments, lest the smell should attract the bears."

The following anecdote of an encounter between one of these animals and an old hunter, given by Dr. Richardson, is too amusing to be omitted. "Reskarrah, an aged Indian, was seated at the door of his tent, pitched by a small stream not far from Fort Enterprise, when a large bear came to the opposite bank, and remained for some time, apparently surveying him. Reskarrah considered himself in great danger; and having no one to assist him but his aged wife, made a speech to the following effect:—'Oh, bear! I never did you any harm; I have always had the highest respect for you and your relations; and never killed any of them except through necessity. Go away, good bear, and let me alone, and I promise not to molest you.' The bear walked off: and the old man, fancying that he owed his safety to his eloquence, favoured us, on his arrival at the fort, with his speech at length."

The colour of an old male, killed on the shores of the Arctic Sea, was nearly of a uniform yellowish brown, except on the forehead and back, where the tips of the fur were paler. The fur, which was straight, and of the fineness of coarse wool, was giving place to a thin coat of blackish hair. Its forehead was broad and slightly convex, and the arch of the orbit rose conspicuously at the root of the nose, which was straight: the legs were long, and the size of the claws intermediate between those of the black and the grisly bears; they projected beyond the hairs, and were more pointed than those of the latter. The following were the principal dimensions: — From the nose to the root of the tail, five feet two inches; the tail, six inches: height, from the sole of the fore foot to the top of the shoulder, two feet nine inches; the hind quarters were three inches lower.* We are principally induced to consider this a distinct species, and to name it accordingly, from the difference between the profile as above stated, and that of the European brown bear, indicating a corresponding diversity in the form of their skulls.

The Black European Bear.

Ursus Europæus, *Cuvier.*

The black bear, the second species found on the continent of Europe, was long confounded with another of a similar colour, but which is now ascertained to be peculiar to America. From this cause, we can find no authentic documents to illustrate the history of the present species, since naturalists, in describing its manners, &c., have blended it with the black bear of America, subsequently noticed; neither do we find any mention of the particular parts of the continent of Europe where it now exists.

M. Cuvier states, that he never saw more than a single living individual, which he afterwards dissected. It was of considerable magnitude. The colour of the

* North. Zool.

fur was brownish black, rough, partly woolly, and rather long, especially on the belly and thighs. The upper part of the nose was a clear fawn-colour, and the remainder of the muzzle of a brownish red fawn. This the baron believes to be the bear which naturalists term the black bear of Europe; which he considers distinct from that of America, whose fur is black, pliant, and shining. The peculiar flattened form of the cranium can be perceived through the hairs which cover it, quite sufficiently to distinguish the animal from the common brown bear.*

The peculiarities of the skull are thus stated by M. Cuvier: — "The frontal portion is flattened, and even concave, especially across; the two ridges which separate it from the fossæ temporales are strongly marked, and form, behind, an acute angle, prolonged into a very elevated sagittal crest, which is not marked until it meets the occiput." The well-marked depression and ridges of the cranium, giving lodgment and origin to the strong muscles of the lower jaw, show that this species is more decidedly a beast of prey than the brown one; in which respect they differ from the bears of corresponding colours which inhabit the New World.†

The Black American Bear.

Ursus Americanus, *Pallas.* Ursus Americanus, American Black Bear, *Richardson.* Ours d'Amérique, *Cuvier.* Black Bear, *Pennant.* Tass, *Chepewyan Indians.* Musquaw, *Cree Indians, North. Zool.* i. 14. (*Fig.* 6.)

Although the merit of being the first to distinguish this animal belongs to Pallas, yet Dr. Richardson is the only naturalist who has studied it in its native wilds; and whose account, which we shall now condense, will consequently supersede all others. It is smaller than the other American bears; it is also of a milder disposition, and lives more on vegetable substances than the black bear of Europe. Its favourite food, in fact, is

* Griff. Cuv. † North. Zool. i. 14.

berries of various kinds; in default of which, it eats



roots, insects, fish, eggs, and such birds and quadrupeds as it can surprise. So partial is it, indeed, to vegetables, that, when it can procure them in abundance, it will pass the carcass of a deer without touching it. It is rather a timid animal, and will seldom face a man, unless compelled by necessity, or when urged by affection to defend its young. In such cases it is a dangerous assailant. I have known, continues Dr. Richardson, the female boldly to confront her enemy until she has seen her cubs attain the upper branches of a tree, when she made off, evidently considering them to be in safety, but, in fact, leaving them an easy prey to the hunter. Its speed when in pursuit is not great; and I have been told that a man may escape, particularly if he runs into a willow grove, or among long grass; for the caution of the bear urges it to stop frequently, and rise on its hind legs, for the purpose of reconnoitring. I have, however, seen a black bear make off with a speed which would have baffled the fleetest runner, and ascend a nearly perpendicular cliff with a facility that a cat might envy. Its strength and agility, indeed, together with its remarkable tenacity of life, renders an attack upon it at all times hazardous; and its chase is always considered by the rude inhabitants of the northern regions as a matter of the highest importance.

The veneration in which the bear is held by the North American Indians is highly curious: Dr. Richardson thinks it may have arisen from the ability and pertinacity with which it defends itself. Many of the native tribes will not join the chase, until they have propitiated the whole race of bears by certain speeches and ceremonies; and when the animal is slain, they treat it with the utmost respect, speak of it as of a relation, offer it a pipe

to smoke, and seldom fail to make a speech in exculpation of the act of violence they have committed in slaying it. Similar superstitions are prevalent among the Laplanders and other northern nations. Pennant* assures us, that the bear is the great master of the Kamtskatkans in medicine, surgery, and the polite arts: these people observe the herbs he has recourse to when ill or wounded, and acknowledge him as their dancing master, minicking his attitudes and graces with great aptness. Bear dances, as Dr. Richardson observes, in which the gestures of the animals are copied, are also common with the North American Indians. Bear hunts are attended with certain curious ceremonies, for which we must refer the reader to *Northern Zoology*, vol. i. p. 18. The women of some of the tribes will not touch a bear's skin, or even step over it, so that one spread at the door of a tent is an effectual bar against female intruders; and even the men of some of the tribes will refuse to eat the flesh.

During winter this species invariably hybernates, and about 1000 skins are annually procured by the Hudson's Bay company from black bears destroyed in their winter retreats. It generally selects a spot for its den under a fallen tree, and having scratched away a portion of the soil, retires to it at the commencement of a snow-storm, when the snow soon furnishes it with a close, warm covering. Its breath makes a small opening in the den, and the quantity of hoar frost which occasionally gathers round the aperture serves to betray its retreat to the hunter: in more southern districts they often shelter themselves in hollow trees. The Indians remark that a bear never retires to its den until it has acquired a thick coat of fat; and it is remarkable, that when it comes abroad in the spring it is equally fat, though in a few days after it becomes very lean. The females retire at once to their dens, and conceal themselves so carefully, that even an Indian hunter can rarely detect them: but the males, exhausted by the pursuit of the other sex,

* Arctic Zool. i. 65.

require ten or twelve days to recover their lost fat. The number of cubs varies from one to five.

The geographic range of the black bear is stated by Dr. Richardson to extend over all the wooded districts of America, from the Atlantic to the Pacific, and from Carolina to the shores of the Arctic Sea. Authors mention bears as inhabiting Persia; but whether, if such be the fact, they belong to this species, may reasonably be doubted.

There are several varieties of this animal, which systematists have fancied were distinct species. Thus, the Cinnamon bear of the fur traders (an individual of which was in the Tower menagerie) is considered, even by the Indians, as an accidental variety; and the same may be said of the yellow bear, or *Ursus luteolus*, of Carolina. A third is the *Ours gulaire* of M. Geoffroy St. Hillaire, which has a white throat, analogous, as Dr. Richardson remarks, to the white collar which many of the European brown bears exhibit when young. A fourth variety is mentioned by M. Cuvier, both sexes of which were in the Paris menagerie. The general colour was rich shining black, but the muzzle was deep brown above, and greyish fawn-colour on the sides; there was also a small fawn-coloured spot in front of the eye. What appears to prove these latter, more especially, to be mere varieties, is the fact of another, which had the fur a little more brown and less smooth, and the spot near the eye almost obsolete; while a fourth, in the same collection, was of the finest black, without any appearance of the spot. The muzzle of this latter was brown above, and the breast was marked with two whitish lines.

Regarding the *Ursus luteolus*, or yellow bear of Carolina, major Smith notices some particulars which must not be passed over in this place, since they go very far to make us suspect the probability of its being a distinct race. This naturalist had an opportunity of comparing a living specimen with another of the common black bear, both being in a menagerie at New York.

He particularly noticed that the ears of the yellow bear stood much more backward than those of the other, that they were not quite so large, and that their general physiognomy was very different: there was also a much greater convexity of forehead and a sharper nose than in the black bear. It seems, also, that no doubt is entertained of their being a distinct race of these animals. They were formerly common in Virginia; and they are still abundant in North-western Louisiana, where they are called white bears, — a name likewise given, as Dr. Richardson observes, to the pale-coloured black bears of Arctic America; but it does not appear, from the relation of that traveller, that any animal answering to the description of the yellow bear of Carolina has ever been seen in those high northern latitudes.

In a commercial point of view, the skins of this species formed, at one time, a most lucrative branch of commerce to the fur traders, and is still so in a less degree. Some idea may be formed of the exterminating destruction that has been carried on against these animals, prompted by the avarice and the vitiated wants of man, when it is stated, that, in the year 1783, no fewer than 10,500 bear-skins were imported into England from the northern parts of America: this number gradually increased until 1803, when it had reached 25,000, the average value of each skin being estimated at forty shillings. Did the Almighty create these creatures merely to furnish hammercloths for the carriages of the great, and military trappings for the "men of blood?" Fortunately for the poor bears, who at this rate would very soon have been exterminated from the earth, the demand, as it is termed, for their skins is now very small. Formerly, Dr. Richardson says, a skin with the fur in prime order and the claws appended was worth from twenty to forty guineas, and even more; but, at present, the best sells for less than forty shillings. We hope this state of things may long continue.

The Grisly Bear.

Ursus ferox, *Lewis* and *Clarke* (1814). Ursus cinereus, *Desmarest* (1820). Ursus horribilis, *Say* (1822). Ursus Canadensis, *Hamilton Smith* (1826). Grisly Bear, *Mackenzie*. (*Fig.* 7.)



The famous exploratory expedition of captains Lewis and Clarke, which brought to light so many of the zoological productions of Northern America, first made naturalists distinctly acquainted with this new and terrible bear, distinguished from all others of the New Continent by its great strength and ferocity, and its peculiar greediness for animal food. It had, however, long been known to the Indians and fur traders as a distinct species, and is even vaguely mentioned in several of the early French accounts of the districts it inhabits. Of this formidable animal there is now (1830) a fine adult specimen living in the Tower menagerie, which was caught as a young cub on the Rocky Mountains; and, although sent home to England by the Hudson's Bay company about eight years ago, this animal is said to be very savage. The strength and ferocity of this species, in its state of nature, is so great, that the Indian hunters use much precaution in attacking it. Some idea of its prodigious power may be formed from the fact of its having been known to drag to a considerable distance the carcass of a buffalo, weighing about 1000 pounds. The grisly bear is reported to attain a weight exceeding 800 pounds; and captains Lewis and Clarke mention one that measured nine feet long,—a size fully equal to that of the largest polar or white bears.

The following anecdote, which well illustrates the savage nature of this species, is given by Dr. Richardson, who says it is well authenticated. "A party of voyagers

had seated themselves in the twilight by a fire, and were busy in preparing their supper, when a large grisly bear sprang over their canoe, which was tilted behind them, and seizing one of the party by the shoulder, carried him off. The rest fled in terror, with the exception of a Melif, named Bourasso, who, grasping his gun, followed the bear as he was retreating leisurely with its prey. He called to his unfortunate comrade, that he was afraid of hitting him if he fired at the bear; but the latter intreated him to do so immediately, as the bear was squeezing him to death. On this he took a deliberate aim: his shot, providentially, entered the body of the animal, which instantly dropped its prey to pursue its new adversary: he escaped, however, with difficulty, and the bear ultimately retreated to a thicket, where it was supposed to have died; but this fact was not ascertained. The man who was rescued, had his arm fractured, and was otherwise severely bitten, although he finally recovered."

The manners of these bears have been thus described by Mr. Drummond, who frequently met them in his excursions over the Rocky Mountains, when attached to the northern expeditions. In these unfrequented solitudes it would often happen, that, in turning the point of a rock, or sharp angle of a valley, our traveller would suddenly come upon one or more of them. On such occasions they reared on their hind legs, and made a loud noise, like a person breathing quick, but much harsher. Mr. Drummond, without attempting to molest them, kept his ground; while the bears, on their part, after attentively regarding their intruder for some time, generally wheeled round and galloped off; though, from their known disposition, there is little doubt but he would have been torn in pieces had he lost his presence of mind, and attempted to fly. On other occasions, when he discovered them from a distance, he generally frightened them away by beating on a large tin box, in which he carried his plants. He never saw more than four together; and they were generally single, or in pairs. On one occasion

only was he attacked, by a female anxious for the safety of her cubs, and he had then a narrow escape: his gun, unfortunately, missed fire; but he managed to keep the bear at bay with it until some of his companions came up and drove her off.*

It is singular, that the young grisly bear can climb trees with facility; but when full grown they are unable to do so, as the Indians report, from the form of its claws. Several instances are known, where a hunter has been held a close prisoner for many hours by the infuriated animal keeping watch below. Several interesting anecdotes of these contests are upon record, for which the reader is referred to the narratives of Lewis and Clarke, to major Longs, and to Godman's *Natural History of America.*

During winter the females and the young males hibernate, but the older males often come abroad in quest of food: they occasionally eat vegetables, but show a decided preference for animal food. As this bear quits its den be forethe snow disappears, its footmarks are frequently seen in the spring; and these, being enlarged by the weight of the animal, and the breaking of the crust of ice around, frequently appear very large: these impressions, somewhat obscured by partial thaw, have been thought to be the footsteps of some enormously large quadruped; and have given rise to the idea of live mammoths existing in the solitary ranges of the Rocky Mountains.

The geographical range of this species is very extensive. Dr. Richardson says it inhabits the Rocky Mountains and the plains to the eastward, and lieutenant Pike affirms that it extends southward as far as Mexico.

The fur is long, and mostly of a dark brown colour, with paler tips; there is also a mixture of grey hairs on the head. The muzzle is pale, without the dark central stripe seen in the black species: it is further distinguished, both from that and the brown bear, by shorter and more conic ears, placed further apart; and

* North. Zool. i. 28.

by white, arched, and very long claws, compressed like the cutting teeth of a squirrel. The tail is very short so as to be hidden by the hair of the buttocks: this is a peculiar distinction; since that of the black species is sufficiently conspicuous, and that of the barren ground bear is even still longer.

The Polar or Sea Bear.

Ursus maritimus, *Linn.* L'Ours blanc, *Buffon.* Ursus marinus, *Pallas.* Polar Bear, *Pennant.* (*Fig.* 8.)



This ferocious wanderer of the arctic circle is distinguished from all other bears by its small narrow head, and lengthened muzzle. Its colour is invariably yellowish white; but this distinction is not to be entirely depended upon, since other species are occasionally found of the same colour towards the regions of eternal snow. Eminently adapted, by his structure and his instinct, for swimming and diving, the polar bear procures ample sustenance in regions where man would perish from hunger. He is the appointed inhabitant of those floating fields of ice which stretch to the northern pole. Here he carries on an almost constant warfare with fish, seals, foxes; and is known even to attack the formidable walrus. He scents his prey at a vast distance, and seems greedily to devour every thing that comes in his way. He will frequently be carried on the ice from Greenland to Iceland; where the white bears commit

such ravages on the flocks, that the inhabitants rise in a body to destroy them. The manner in which he surprises a seal has been thus described by captain Lyon. — "The bear, on seeing his intended prey, gets quietly into the water and swims to leeward of him; whence, by frequent short dives, he silently makes his approaches, and so arranges his distance, that at the last dive he comes to the spot where the seal is lying. If the poor animal attempts to escape by rolling into the water, he falls into the bear's clutches; if, on the contrary, he lies still, his destroyer makes a powerful spring, kills him on the ice, and devours him at leisure." Captain Lyon describes the pace of the polar bear, when at full speed, as a kind of shuffle, as quick as the sharp gallop of a horse.

Of the amazing power of this animal many extraordinary accounts have been told, which need not be here repeated. We cannot, however, pass over the following, given by Mr. Churchill, and pointed out to us by Dr. Richardson.—"On the 6th of September, 1594, part of the crew of Barentz's vessel landed to search for a certain sort of stone; during this search, two of the party laid down together to sleep, when a white bear, very lean, softly approached and seized one of them by the nape of the neck. The poor man, not knowing what it was, cried out, 'Who has seized me thus behind?' on which his companion, raising his head, said, 'Holloa, mate, 't is a bear,' and immediately ran away. The bear, having dreadfully mangled the unfortunate man's head, sucked his blood: the rest of the party, to the number of twenty, immediately ran with their arms, and found the bear devouring the body; the bear, on seeing them, ran upon them, and carrying another man away, tore him also to pieces. This second adventure so terrified them, that they all fled. They returned, however, with a reinforcement; and the two pilots having fired three times without hitting the animal, the purser approached a little nearer, and shot the bear in the head close to the eye. This did not cause him to quit his prey, for, holding the

body which he was devouring fast by the neck, he carried it away, as yet quite entire. Nevertheless, they then perceived that he began himself to totter; and the purser and a Scotchman going towards him, they gave him several sabre wounds, and cut him to pieces, without his abandoning his prey."*

Another story, more amusing than serious, occurs in a manuscript account of Hudson's Bay, written in 1786, by Mr. Andrew Graham, who assisted Pennant so much in his *Arctic Zoology*. One of the company's servants, who was out procuring hares, having occasion to come to the factory for a few necessaries, on his return to his tent, passing through a thicket of willows, found himself close to a white bear lying asleep. As he had nothing wherewith to defend himself, he took the bag off his shoulder and held it before his breast, between the bear and him. The animal arose on seeing the man, stretched himself, and leisurely rubbed his nose; and having satisfied his curiosity by smelling at the bag, which contained a loaf of bread and a flagon of beer, relieved the poor man from his apprehensions, by turning round and walking quietly away.

During winter, the white bear, being always able to fish and procure animal food, does not hybernate like the other species; but this must only be understood of the males, since the pregnant females seclude themselves in the usual manner. Hearne, whose observations in general have been found pretty correct, states, that on the setting in of winter, the females burrow in the deep snow drifts, and there remain to bring forth their young; but the males set out to leave the land, swimming to and wandering upon the fields of ice, in search of seals, &c.

Of the manners of this species under confinement, M. F. Cuvier has given a long account; but, as we have detailed its native habits at some length, we need not fatigue the reader by describing the animal in its unnatural state. The one that lived in the Paris menagerie suffered so extremely from heat, that, for the

* Church. Coll. of Voy. i. 88.

purpose of cooling him, the keepers would throw buckets of water over his body: this seemed to give him an extraordinary degree of pleasure.

The Malay Bear.

Ursus Malayanus, *Raffles, Horsfield.* Bruang, *Malays.* (*Fig.* 9.)

An adult and healthy individual of this playful and remarkably docile bear, was alive, six years ago, in the Tower menagerie. As a species it was first made known to naturalists by the late Sir Stamford Raffles; and subsequently M. Duvaucel furnished us with a more ample and satisfactory account. Dr. Horsfield has likewise explained its structure with his usual precision. It seems, like all the other bears of India, to be entirely destitute of that savage and ferocious disposition which more or less belongs to all those species inhabiting colder regions. Sir Stamford kept one of these animals in his possession two years, and observes, that "when young it becomes very tame:" the individual alluded to "was brought up in the nursery with the children; and when admitted to my table, as was frequently the case, gave a proof of his taste by refusing any wine but Champagne. The only time I ever knew him out of humour was when no Champagne was forthcoming. He was naturally so playful and affectionate, that it was never found necessary to chain or to chastise him: it was usual for this bear, the cat, the dog, and a small parrot to mess together and eat out of the same dish. His favourite playfellow was the dog, whose teazing and worrying was always borne and returned with the utmost good humour and playfulness. As he grew up he became a very powerful animal, and in his rambles in the garden he would lay hold of the largest plantains, the stems of which he could scarcely embrace, and tear them up by the roots."*

In a state of nature, M. Duvaucel remarks that this species, although not very common in any part of India,

* Linn. Trans. xiii. 254.

has nevertheless a wide geographic range, and is subject to much variation in its colours. The smallest race comes from Pegu, and the largest from the island of Sumatra, where they are very common, and appear to have migrated from the continent. It causes great ravages in the island to the fruit; climbing to the summit of the cocoa palms to drink the milk, after destroying the tops of the plant.



The individual in the Tower is described as very full of action, though its movements may be called slow and measured; with all its muscular clumsiness, it appears to possess great suppleness of joint, in throwing itself into many and very antic postures. Its favourite position, however, is that here represented by Mr. Landseer — sitting on its haunches, and thrusting out its long narrow tongue to a very extraordinary length. It eats about two pounds of bread and milk a day.

In size, this is the smallest of the Indian bears, measuring only three feet eight inches from the nose to the root of the tail, which is remarkably short. Its colour is jet black in every part, except the muzzle, which is grey: the semilunar mark, so conspicuous on the breast, is variable in colour; in a specimen at the India House it is white, but M. Duvaucel describes it as red; and that in the Tower is stated to be "yellow with a tinge of red;" its form is more constant, and resembles that of a horseshoe. The whole of the fur is short, fine, and glossy, lying close over the body as well as on the head. In its figure it stands lower, but is a stouter and a better proportioned animal than the common bear.

The Thick-lipped Bear.

Ursus labiatus, *Blainville.* Bradypus ursinus, *Shaw.* Prochilus ursinus, *Illiger.* Melursus, *Meyer.*

In the year 1790, an old individual of this species, which had lost its cutting teeth, was exhibited in England, and although called a bear, was pronounced by the scientific of those days to be a sloth: it was accordingly described and figured by Dr. Shaw under the name of *Bradypus ursinus,* or ursiform sloth; and the learned Illiger, deceived by this imperfect account of our countrymen, formed upon it his genus *Prochilus.* This individual seems to have been the first that had ever reached Europe. The species, however, has more lately become better known, and is found to be a genuine bear, although possessing certain traits of habit, which may in some degree account for the want of tact in its first describer of recognising its true station in nature. Mr. Buchanan Hamilton, in his Indian travels, published in 1807, was the first to discover that this supposed sloth was a bear peculiar to the mountains of India. It is the largest species of the three now known to inhabit Continental India, and is altogether superior to them in general intelligence and docility. M. Duvaucel assures us it is often met with in the mountains of Silhet; and that the natives declare it is exclusively frugivorous, or living only upon fruits and vegetables. As being the most common species in Bengal, and possessing peculiar docility, it is frequently educated by the Indian juggler, and taught to exhibit for the amusement of the vulgar. Its motions are easy, as the body is long, and the limbs elevated. Nothing further is known of its natural economy, and we are uncertain whether any living specimen is existing at this time in England.

The Common Racoon.

Procyon lotor, *Cuv. North. Zool.* i. 36. Ursus lotor, *Linn.*
Le Ratan, *Buffon.* Raccoon Bear, *Pennant.*

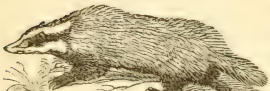
Although this animal has been long known to naturalists, and is often seen in menageries, we are without any very detailed information regarding its natural habits. Dr. Richardson enumerates the racoon as inhabiting the southern districts of the fur countries belonging to British America; and although it does not appear to have actually fallen under his observation, the short account he was able to procure of it is most probably authentic. In its native state it sleeps by day, comes from its retreat in the evening, and prowls in the night in search of roots and other vegetables, as well as birds and insects; although it is said merely to eat the brains and suck the blood of such birds as it kills: at low water, it frequents the sea shore, to feed on crabs and oysters: it is fond of dipping its food into water before it eats, whence its specific name. It is an animal with a fox-like countenance, but with much of the gait of a bear; and, being partially plantigrade, it was classed by Linnæus in the genus *Ursus*. It climbs trees with facility. The fur is used in the manufacture of hats; and about one hundred skins are annually imported from the Red River, in lat. 50°, by the Hudson's Bay company.

In captivity, the racoon, like all other nocturnal animals, is heavy and stupid during the day, when it rolls itself up, placing the head between the thighs. It is easily tamed, and soon becomes familiar, but does not appear capable of much attachment or docility. The racoon seems to be a well known inhabitant of the greatest part of North America.

The total length is about two feet and a half. The hair of the body is grizzled. The tail, which is about ten inches long, is bushy like the brush of a fox: the feet are short, and all the toes armed with long, strong claws, fit for burrowing.

The American Badger.

Meles Labradoria, *Richardson. North. Zool.* i. 37. Ursus Labradoricus, *Linn.* Carcajou, *Buffon.* American Badger, *Sabine.* Brairo et Siffleur, *French Canadians.* (*Fig.* 10.)



10

The American badger differs totally from that of Europe, which has a darker, coarser, and much shorter fur, and is marked with well-defined lines of white on the head: it is also a more carnivorous animal. Its range to the north extends to the banks of the Peace River, in lat. 58°, and it abounds on the plains watered by the Missouri. In a state of nature, it is a slow and timid animal, taking to the first earth it reaches when pursued; but, as it burrows with great facility, it soon places itself out of danger. The strength of its fore feet and claws is so great, that one which had insinuated only its head and shoulders into a hole, resisted the utmost efforts of two strong young men, who endeavoured to drag it out by the hind legs and tail. The sandy plains in the neighbourhood of the Saskatchewan River, as Dr. Richardson observes, are so perforated by badger holes, that they become a great annoyance to horsemen, and are even dangerous when the ground is covered with snow. These holes are partly dug by the badgers for habitations; but the greater number of them are merely enlargements of the burrows formed by two species of marmots (*Arctomys Hoodii* and *Richardsonii*), which the badgers dig up and prey upon. When the snow covers the ground, this animal rarely or never quits its hole; where, in fact, it passes the winter in a torpid state: it does not lose much flesh during this long hybernation, which usually lasts from November to April; for on coming abroad in the spring, it is generally fat. We know not of any living specimens now

in England, and cannot, therefore, speak of this species in a state of confinement.

The size is rather less, and the form not so thick, as that of the European badger. The fur is very soft and fine. The general colour is hoary grey: the top of the head is darker, divided by a narrow white line. The usual length (including the tail, which is six inches) does not exceed two feet and a half.*

The Javanese Badger.

Meles Javanensis, *Swainson.* Mephitis Javanensis, *Raffles.* Le Télegon, *Fred. Cuvier.* Mydaces miliceps, *ditto, Horsfield.* Teledu, *Javanese.* Seng-gung, *Sunda Javanese.* Teleggo, *Sumatrese.*

The Javanese badger appears to be that connecting link in the chain of nature by which she unites the mephitic weasels with the true badgers. We shall therefore regard it as belonging to the latter tribe, although it has been elevated to the rank of a distinct genus. Dr. Horsfield has given us some long and interesting details on the structure and habits of this curious animal, but we regret our limits will only admit of a few brief extracts.

In its natural state, the Javanese badger presents a singular fact in its geographic distribution. It is confined exclusively to those mountains in Java which are elevated more than 7000 feet above the level of the sea. On ascending these mountains, scattered over the whole island, the traveller is sure to meet with this animal, which is well known to the inhabitants of these elevated regions; whereas to those of the plains it is as strange as any quadruped from a foreign country. In the rich vegetable soil of these districts and elevated valleys, most of the European pulse and fruit grow with luxuriance, and it is here the badger holds its range as the ancient proprietor of the soil; it is a great annoyance to the inhabitants, from its destroying the roots of young plants. It uses its nose, like the hog, to burrow

* North. Zool. i. 40.

in the earth; and as it feeds during the night, its track, in the morning, may be traced by small ridges of mould recently turned up.

Its dwelling is made in the earth, and with considerable ingenuity. It selects some spot adjoining the root of a large tree; it here constructs a chamber beneath the surface, of a globular form, and several feet in diameter; it makes the sides perfectly smooth and regular; it then proceeds to make a subterraneous conduit or avenue, about six feet in length, the external entrance to which is concealed with twigs and dry leaves. In this retreat, like the badger, it remains concealed during the day, issuing forth at night to search after insects and worms. Of the latter it seems very fond; and it is, no doubt, in searching after them that this animal injures the seedling plants, without any intention of devouring the latter. They live in pairs, and the female produces two or three young at a birth. Like the mephitic weasels, it possesses the power of ejecting an extremely offensive odour, which spreads to so great a distance as to infect the entire neighbourhood of a village; and in the immediate neighbourhood of the discharge it is so strong as often to produce syncope. It cannot, however, be propelled to a greater distance than about two feet, which is a much weaker discharge than what can be effected by the skunk weasel of America. When the natives suddenly surprise this animal, the flesh is scarcely impregnated with the offensive odour, and it is then said to be very delicious.

In confinement, and when taken young, it is not ferocious, and may be easily tamed. An individual kept by Dr. Horsfield, soon became gentle, and was so well reconciled to its situation as at no time to emit its offensive fluid. While the doctor had it drawn, it was tied to a small stake, about which it moved briskly, burrowing the ground with its snout and feet as if in search of food, without taking any notice of the bystanders. On having some earthworms brought to it, the animal fell on them voraciously, holding one extremity with its

claws, while its teeth were employed to tear the other: having consumed about ten or twelve, it became drowsy, and making a small groove in the earth, in which it seemed to place its snout for protection, it composed itself very deliberately, and was soon sound asleep.

The appearance of this animal, from the heavy form of its body, the shortness and strength of the neck, and its obtuse snout, reminds the observer of the figure of a hog. The fur is warm, adapted to the cold regions which the animal inhabits; it is composed of long delicate hairs, silky at the base, and very closely set: the colour is blackish brown, more or less intense, on every part of the body; but from the crown to the tip of the tail is a broad streak of yellowish white. The tail is scarcely half an inch long, but it is bushy, and the hairs being lengthened, makes it appear longer. The offensive matter is contained in two glands near the extremity of the *rectum*.

The Brazilian Racoon, or Coati Mondi.

Procyon Nasua, *Nob.* Viverra Nasua, *Gmelin.* Nasua rufa et fusca, *Desmarest.*

The Brazilian name of *Coati Mondi*, originally given by Marcgrave to this animal, has been preserved to it by the common consent of showmen and compilers. We have already shown the inexpediency of naturalising such names, not only as giving no definite ideas of the animals so designated, but as leading to erroneous and sometimes to palpably false conclusions. We have, therefore, ventured to term the species now under consideration, the Brazilian racoon, as appearing to associate more naturally with that animal than with any other; and, although it has evidently some peculiarities, we place it in the same genus, rather than form it into a new one.

The Brazilian racoon, in its native state, is said to live in small troops, in woods adjoining cultivated grounds, particularly sugar plantations, where it causes

much injury to the canes. The sense of smell appears to be particularly acute. M. Fred. Cuvier, speaking of a living specimen which he describes in the Paris menagerie, says, that its nose is in perpetual motion, as it is applied to every object presented to its notice, as if the animal intended to feel by it: the snout is obviously of considerable use in assisting the animal to hunt after earthworms and underground insects, in which occupation he uses his fore paws for digging; with these also he conveys his food to his mouth, not in the manner of monkeys, but by digging his nails into the food. In climbing, also, the fore paws are much used: in descending, he always came down head foremost, using the nails of the hinder ones as hooks; for which purpose they are capable of being greatly bent inwards. Its voice is described as like a gentle hissing when pleased, and as very shrill and piercing when influenced by pain or displeasure. Its smell is strong and disagreeable. The tail is always carried in an elevated position.

This species is subject to so much variation in colour, that we see no evidence, sufficiently strong, for considering the red and the brown coati of the French writers as distinct species. Even M. Fred. Cuvier, who appears to have had living specimens of both before his eyes, appears to us entirely to have failed in establishing a specific difference; indeed, this very able zoologist declares, after the most minute comparison, that he can detect no difference between them but colour. As to the brown coati, it appears that it seldom happens that two specimens are ever found alike; and every variety of shade, between brown and fawn-colour, may be traced: in most of these there is a white line along the nose, and three other white spots round the eye. The tail varies greatly; it is sometimes entirely black, but is more frequently covered with alternate rings of deep brown and fawn-colour.

The fawn-coloured variety is chiefly found towards Paraguay. A specimen then living in the Paris menagerie enabled M. Cuvier to observe the following

traits in its character:—It had previously enjoyed complete liberty, and was found a useful inhabitant of the barns and stables of its master, which it soon cleared of rats and mice, which it caught with great dexterity; it would also search in the garden for worms and snails. On being put under restraint, it bit at every person; but, as soon as it came to be regularly fed, it evinced much docility; it would thrust its long muzzle under a sleeve or waistcoat, and utter a little soft cry of pleasure. When it scratched itself, it frequently made use of both its fore paws at once; and it had a singular custom of rubbing the base of its tail between its fore paws,—an action which appeared quite inexplicable. It soon took a fancy to a little dog; and, as the friendship seemed mutual, they were both allowed to inhabit the same cage.

The Potto.

Cercoleptes caudivolvulus, *Illiger.* Viverra caudivolvula, *Schreber.* Potat, *Buffon.* Yellow Macauco, *Pennant.* Kinkajou, *Desmarest.*

This is one of the most singular and apparently anomalous quadrupeds we have yet mentioned. It is from the forests of South America, and is by no means an uncommon animal in the menageries of Europe. Its general appearance is so much like that of a lemur, that Pennant classed it, without hesitation, with that family, while in its teeth and feet it shows a strong affinity to the feline race; from these last, however, it essentially differs in having a long prehensile tail. Of its natural habits little appears to be known. Baron Humboldt affirms that it makes use of its long tongue to suck honey, and hence is a great destroyer of the nests of bees: this habit has procured for it, among the missionaries, the name of the Honey Bear.

M. Fred. Cuvier records some interesting particulars of an individual in the Royal collection, which will tend much to show the probable situation of this animal in

the circle of nature. Its size was that of a domestic cat; but its whole physiognomy was remarkably like that of a lemur. The fur also, in its smoothness, softness, and thickness, bore a strong resemblance to that of the latter animal: it was not so high; but it had very much of the same gait, especially behind, although it walked altogether on the soles and the palms. It was slow in its movements, which seemed executed with difficulty; (this, it is presumed, was when upon the ground only;) but when it sprang forward, or jumped, it seemed extremely active. Its large eyes, almost directed forward, seemed to complete the resemblance which the animal had to the family of lemurs.

In its disposition this individual was extremely mild, and very fond of being caressed. It passed the entire day, like the lemurs, in sleeping; the head reclined on the breast, and covered around by the arms. When awakened in the day, it obviously suffered much distress from the glare of light, and sought to conceal itself in the darkest corner. By caresses, however, it would sometimes be induced to play; but the moment they ceased, the necessity of sleep seemed to overcome it. As twilight advanced, it would gradually awaken, advance a few paces, utter a bleating sound, and throw out its very long tongue: it would then drink, and take its food, which consisted of bread, biscuit, and fruit. It sometimes ate meat, but showed a decided partiality for vegetable diet. The fore paws were generally used to carry food to the mouth,—a character belonging to all the lemurs. Like those animals, also, the potto climbed with great dexterity; while, in descending, it would clasp with its hind legs, so as completely to turn back the foot,—an action which must depend upon a peculiar conformation of the leg. The prehensile tail was often used to prevent falls, and even to draw objects towards the animal which could not be reached by the hands. Its voice, when placid, was a soft hiss; but when irritated, it resembled the barking of a young dog.

The general colour of the animal is yellowish grey,

which is of a deeper or more golden tint on the sides of the head and the middle of the breast and body: the eyes are large and black, and the ears and muzzle dull violet. All the hairs of the fur are grey till within one third of their length; the latter portion being yellowish: the tail, towards the end, is darker than the colour of the body.

The Wolverine, or Glutton.

Gulo luscus, *Sabine. Rich. North. Zool.* i. 41. Ursus luscus, *Linnæus.* Gulo Arcticus, *Desmarest.* Wolverine, *Pennant.* Kablee-arioo, *Esquimaux Indians.* Carcajou, *French Canadians.* Quickehatch, *English Canadians.*

The glutton, of which such strange and incredible stories have been handed down by compilers of zoology for the last hundred years, is supposed by Dr. Richardson, with every appearance of truth, to be no other than the American wolverine; an animal, of which this enterprising traveller was the first who has given us any authentic history. From his observations, therefore, contained in the admirable volume upon American quadrupeds, with which he has enriched science, we shall extract the following account.

The wolverine was first described by La Hontan, who says "it is very like a badger, but that it is larger and fiercer." It is carnivorous, and feeds chiefly upon the carcases of beasts that have been killed by accident. It has great strength, and annoys the natives by destroying their hoards of provisions, and demolishing their marten traps. It is nevertheless so suspicious, as rarely to enter a trap itself; but, beginning behind, pulls it to pieces, scatters the logs of which it is built, and then runs off with the bait. In this respect its manners are quite as singular as those with which it has been invested by fiction. It feeds likewise upon meadow mice, marmots, and other similar animals; and it will occasionally disable quadrupeds of a much larger size. "I have seen one," says Dr. Richardson, "chas-

ing an American hare, which was at the same time pursued by a snowy owl." In its gait it resembles the bear, and is not fleet; but it is very industrious, and no doubt feeds well, as it is generally fat. It is much abroad during winter, and its track over the snow in a single night, may be often traced for many miles. Its legs being short, its progress through the loose snow is difficult; but when it falls upon the beaten track of a marten trapper, it will pursue it for a long way. Mr. Graham confirms this singular habit of the wolverine destroying the traps, which it certainly could never have learned before these regions were inhabited by the fur traders. "The wolverines," observes Mr. Graham, in his unpublished MSS.* "are extremely mischievous, and do more damage to the small fur trade, than all the other rapacious animals conjointly. They will follow the marten hunter's path round a line of traps extending forty, fifty, or sixty miles, merely to come at the baits, and thus render the whole unserviceable. They are not fond of the martens themselves, but never fail of tearing them in pieces, or of burying them in the snow by the side of the path, at a considerable distance from the trap. Drifts of snow often conceal these repositories, thus made by the martens, from the hunter; in which case they furnish a regale to the hungry fox, whose sagacious nostril guides him unerringly to the spot. Two or three foxes are often seen following the wolverine for this purpose."

Dr. Richardson remarks, that the wolverine is said to destroy great numbers of beavers; but it must be only in the summer, when those industrious animals are at work on land, that it can surprise them. An attempt to break open their houses in winter, even supposing it possible for the claws of a wolverine to penetrate the thick mud walls when frozen as hard as stone, would only have the effect of driving the beavers into the water, to seek for shelter in their vaults on the borders of the dam. The wolverine, although said to defend

* Cited by Dr. Richardson.

itself with success against all other quadrupeds, flies from the face of man.

The geographic range of this animal is over the whole northern part of America, from Labrador and Davis's Straits to the shores of the Pacific. Its bones have even been found in Melville Island, and it is common in Canada.

The total length is a little more than three feet. The head is broad, compact, and suddenly rounded off, while in the shape of its jaws it resembles a dog. The whole aspect indicates great strength, without much activity. The fur greatly resembles that of the black bear, being of a black or dark brown colour, with a paler band on each side the flanks: there are some white marks also on the throat and chest, which are not constant in their shapes. The claws are strong and sharp.

The Banded or South American Wolverine.

Gulo vittatus, *Cuvier*. Viverra vittata, *Linn*. Grison, *Buffon*. Petit Fruret, *Azara*.

This may be considered the representative of the last species, or common wolverine, in South America, since it appears restricted to those latitudes south of the equinoctial line. According to Azara, it is very common in Paraguay, but appears scarce in Surinam. We cannot trace what are the intermediate countries it inhabits. In a state of nature it is said to be a most ferocious little animal, living entirely upon small quadrupeds, birds, reptiles, &c.

In confinement it preserves its sanguinary disposition, if not well supplied with food; but it yet appears capable of a certain degree of domestication, and even of docility. M. F. Cuvier gives the following account of one which was then living in the Paris menagerie:— "Although it was so far tamed as to be fond of play, it did not appear to recognise any person in particular. It seemed to derive great pleasure from being stroked down the back. When invited to play, it would turn

over, return with its paws the caresses it received, and gently bite the fingers, but never so as to hurt or wound them. It almost appeared as if the creature knew the degree of resistance which the skin was capable of making, and that it proportioned the force of its bite accordingly, when it wished to express its joy; it seemed also to know the fingers of a person without seeing them. It preserved, however, its natural thirst of blood for all those living beings which could become its prey; since one day it broke the bars of its cage to attack a lemur that was within reach, and mortally wounded it. Upon catching a bird, it killed it directly, and laid it by as if for store; it did the same with such part of its usual provisions as it did not appear immediately to want."

The size of the *Grison*, as the French call this animal, is rather small, the length measuring about eighteen inches from nose to tail: the body is lengthened; and as the toes are half connected by a membrane, Dr. Trail considers it as belonging to the otter genus. The colour of the fur, unlike most other quadrupeds, is darker underneath than upon the back: it is of a pale grey colour, mixed with silky black; or, rather, each hair is alternately coloured with black and yellowish white. This is the upper colour; but that of the muzzle, lower jaw, throat, chest, and body, is deep black: in addition to this, there is a pale grey or whitish line, which springs from between the eyes, and passes over the ears to the sides of the neck. The tail is six inches long.

The Rattel, or Cape Wolverine.

Gulo mellivora, *Nobis.* Viverra mellivora, *Gmelin.* Rattel, *Sparman.* Fizzler Weasel, *Pennant.* Ratellus Ratel, *Fred. Cuvier.*

This animal, which seems to have a close affinity with the preceding, is placed conditionally in the same genus. It is sometimes brought from Southern Africa; but, although by no means uncommon, we do not find any record of living examples in our menageries.

In its native country, as Mr. Daniel informs us*, the choice food of the rattel is said to be honey; and nature has endowed it with a hide so very thick, that it cannot be penetrated by the sting of a bee. It is so particularly tenacious of life, that a dog with great difficulty succeeds in killing it; and even wanton cruelty is long in depriving him of existence.

The rattel is a thick, heavy shaped animal, with rather a large head, and destitute of external ears. The fur is long and rough. The upper parts of the head, neck, back, and tail are ash-coloured, while the muzzle and all the under parts are black; the two colours being separated by a bright grey line.

The Minx, or Vison Weasel.

Mustela Vison, *Linnæus. Rich. North. Zool.* i. 48. Le Vison, *Buffon.* Minx Otter, *Pennant.*

We now pass to such animals of the weasel tribe as are most likely to come under common observation in menageries; or whose skins, as articles of dress or of commerce, are in general use; and of which, consequently, something should be known by every one.

The minx is one of the most common animals of the fur countries of North America, and its habits have been thus detailed by Dr. Richardson. It is a much more aquatic animal than others of its congeners, passing much of its time in the water, to which, when pursued, it retreats, in preference to seeking its escape by land. It walks slowly, but can swim and dive so well as to remain a considerable time under water. Its short fur, forming a smooth glossy coat, its tail, exactly like that of an otter, and the shortness of its legs, denote its aquatic habits. During summer it preys upon small fish, spawn, shells, &c.; but in winter, when its watery haunts are frozen over, it will hunt mice on land, or travel to a considerable distance, through the snow, in search of a fall or rapid where the water has not yet been

* Daniel, African Scenery.

frozen. When irritated, it exhales, next to the skunk, the most fetid smell of any animal in the fur countries: this odour resides in a fluid, secreted by two glands situated behind. When in the water it betrays no timidity, since it will approach a canoe, as if from curiosity; but the moment it perceives the flash of a gun, or any unusual movement, it instantly dives.

In confinement the minx is easily tamed, and is capable of strong attachment. In this state it is observed to sleep much in the day, and to be fond of warmth. Dr. Richardson mentions one which he saw in the possession of a Canadian woman, and which passed the day *in her pocket*, looking out occasionally when its attention was roused by any unusual noise. Like the cat, however, this animal is easily offended, and will, on a sudden provocation, bite those who are most kind to it, notwithstanding its fondness for being caressed.

The fur, although very fine in texture, is so short as to be of little value as an article of commerce; so great is the influence of fashion in preferring appearance to use. Dr. Richardson even says, that at many of the remote stations of the Hudson's Bay company, these skins are taken by the traders from the Indians, merely to accommodate the latter, *and afterwards burnt*, because they will not repay the expense of carriage! How many hundreds of the lower orders of people in this country might be made comfortable by these skins, were they permitted to be sent us *free of duty?*

The size is less than that of the pine marten, but, from the great length of its neck, it is nearly as long. The fur is of two sorts, — one a very dense down, the other composed of longer and stronger hairs; these latter form a smooth shining coat of a chocolate or umber brown colour, and completely conceal the down beneath: the head and the belly are paler; and the lower jaw is white, with a narrow brown mark at the end. The whiskers are shorter than the head, and are remarkably strong.

The Pekan, or Fisher Weasel.

Mustela Canadensis, *Linn. North. Zool.* i. 52. Le Pekan, *Buff.* Fisher, *Pennant.* Pennant's Marten, *Godman.* Otchœk, *Cree Indians.* Pekan, *Canadian Voyagers.* Wejack, or Fisher, *Fur Traders.* Woodshock, *Hudson's Bay Company's Sale Lists.*

This animal was long confounded, both by voyagers and naturalists, with the minx; so that, although abundant in the fur countries towards Hudson's Bay, Dr. Richardson appears to be the first writer who distinctly described it. From the *Northern Zoology*, we learn that it is a larger and stronger animal than any of the varieties of the pine marten, but that its manners are similar,—climbing trees with equal facility, and preying chiefly upon mice. It lives in damp woods; in which respect it differs from the martens, who prefer the dryest places in the pine forests. The fisher is said to prey, during summer, upon frogs; but it appears that its favourite food is the Canadian porcupine, which it kills by biting on the belly. It does not seek its food in the water, although it is well known to plunder the hoards of frozen fish laid up by the natives. Its geographic range is very wide, extending from Pennsylvania to Great Slave Lake, and completely across the continent.

The fur has a considerable resemblance to that of the common pine marten in its summer dress; but it is harsher, and much less valuable; and the animal itself is nearly twice the ordinary size of the other. Some thousands are annually killed in the Hudson's Bay countries.

The general physiognomy of the pekan is very different from that of the marten: when the latter is threatened, its features resemble those of an enraged cat; whereas the expression of the pekan more resembles that of a dog. The colour of the fur, outside, is blackish brown, with a considerable lustre: the throat, belly, and legs are brownish black; sometimes there is a white spot between the fore legs, or on the throat, and another

between the hind legs, but these marks are not constant. The tail is clothed with long black hair. In the Hudson's Bay museum there is a white variety of the pekan, having only the nose and feet brown; but this colour is rarely met with.

The Hudson's Bay Weasel, or Skunk.

Mephitis Hudsonica, *Rich. North. Zool.* i. 55. Mephitis Americana, *Sabine.* Skunk Weasel, *Pennant.* Seecawk, *Cree Indians.*

There exists, both in America and in Southern Africa, a certain race of weasels, which are provided by nature with a very singular, and even formidable, mode of self-defence. This consists in the power of ejecting, at will, a most insupportable and offensive stench, which is as noxious to man, as it is to all other animals excepting those of its own tribe. The history of these quadrupeds, or, more properly, their specific distinctions, require much investigation; since they are all more or less black, marked with very distinct white stripes. We shall, therefore, confine our attention to that which is now best known from the personal observations of Dr. Richardson, and which is, in all probability, a peculiar species.

The skunk of Hudson's Bay is not an uncommon animal in the district it inhabits, chiefly frequenting the rocky and woody parts. In summer it feeds upon frogs and mice; but it passes the winter in a hole, seldom stirring abroad, and then only for a short distance. It has a slow gait, and can be overtaken without difficulty; it makes, in fact, but a poor attempt to escape, apparently trusting to its power of discomfiting its pursuers by the discharge of its noisome fluid.

The stench of this fluid is one of the most powerful and disgusting in nature, and is so durable, that the spot where a skunk has been killed will retain the taint for many days. The liquor is contained in a small bag placed at the root of the tail; it is of a deep yellow colour; and the animal can eject it to the distance of

nearly four feet. Mr. Graham observes, that he knew several Indians who lost their eyesight, in consequence of inflammation from this cause; and Dr. Richardson says that he has known a dead skunk, thrown over the stockades of a trading port, produce instant nausea in several women in a house with closed doors upwards of a hundred yards distant.* Our traveller adds, "One may, however, soon become familiarised with it; for, notwithstanding the disgust it produces at first, I managed to skin a couple of recent specimens, *by recurring to the task at intervals.*" If the carcase is not touched by this fluid, the flesh is considered by the natives as excellent food.

In general appearance, the skunk is a very pretty animal: it has a long bushy tail, and its aspect more resembles that of a wolverine than of a marten: it stands low on its legs, and has a broad, thick body, and wide forehead; the body is broadly striped by black and white; but the cheeks, and all the under parts, are entirely black. The fur, although long, is coarse, and is but little valued in commerce. The claws on the fore feet are very strong and long, being adapted for digging, and are very unlike those of the martens.

The Ermine, or Stoat.

Mustela erminea, *Linnæus.* Stoat Weasel, *Pennant.* Putorius erminea, *Cuvier.* Seegoos and Shacooshew, *Cree Indians.* Ferreeya, *Esquimaux Indians.* *North. Zool.* i. 46.

It may be needless to inform most of our readers that the beautiful fur called *ermine* is the winter dress, in high northern latitudes, of the common stoat, the pest and detestation of those farmers upon whose premises it takes up its abode. Although, therefore, it is a British animal, we introduce it here to enrich our pages with some authentic accounts of its manners as witnessed in America; for, strange to say, our native Fauna has been so much neglected, that we frequently are indebted

* North. Zool. i. 55.

to foreigners or travellers for facts and anecdotes of those animals which live under our very threshold. As with us, the ermine often domesticates itself in the habitations of the American fur traders, where it may be heard the live-long night, pursuing the white-footed mouse (*Mus leucopus*), a species peculiar to those countries. Captain Lyon, in his usual animated style, mentions his having seen an ermine track the steps of a mouse, like a hound after a fox. "I also observed," says he, "a curious kind of burrow in the snow, made by the ermines, which was pushed up in the same manner as the tracks of moles through the earth in England. These passages run in a serpentine direction; and near the hole, or dwelling-place, the circles are multiplied, as if to render the approach more intricate." Captain Lyon also gives us the following amusing sketch of an ermine he kept alive: — "He was a fierce little fellow; and the instant he obtained daylight in his new dwelling, he flew at the bars and shook them with the greatest fury, uttering a very shrill, passionate cry, and emitting a strong musky smell: no threats or teasing would induce him to retire to the sleeping-place; and whenever he did so of his own accord, the slightest rubbing on the bars was sufficient to bring him out. He soon took food from the hand, but not until he had first used every exertion to reach and bite the fingers which conveyed it."

The fur, some twenty years ago, was one of the most expensive sorts, — a small tippet being then sold at from three to five guineas; at present, however, its value is considerably less, — indeed, so little, that Dr. Richardson says the skins will not repay the Hudson's Bay company the expense of collecting; hence very few are brought to England from that quarter.

The stoat is as common in America as it is in the colder parts of Europe and of Asia. It was very common near the Carleton House Station, and in the most remote arctic districts, and extends to the middle parts of the United States.

The Canadian Otter.

Lutra Canadensis, *Rich. North. Zool.* i. 57. Loutre de Canada, *Buffon.* Common Otter, *Pennant.* Neeekek, *Cree Indians.* Capucca, *Nootka Sound Indians.*

The otters may be called aquatic weasels, since they both evince the same ferocity of disposition, are incessantly hunting small animals, and have the same length and slenderness of body. It was long supposed that the otter of Canada perfectly resembled that of Britain; but Buffon rightly conjectured that they were distinct; and it now appears that there is a third species, peculiar to the warm latitudes of South America. The manners, indeed, of the Canadian, are almost the same as those of the European otter. It frequents the falls and rapids of the rivers, to have the advantage of open water; and when its usual haunts are frozen over, it will traverse the snow for a great distance in search of such spots as may not yet be covered with ice. If on these journeys it is seen and pursued, it will throw itself forward on its belly and slide through the snow for several yards, leaving a deep furrow behind it. This movement is repeated with so much rapidity, that even a swift runner on snow shoes has much trouble in overtaking it. It also doubles on its track with much cunning, and dives under the snow to elude its pursuers. When closely pressed, it will turn and defend itself with great obstinacy. In the spring of 1826, at Great Bear Lake, the otters frequently robbed the fishing-nets which were set under the ice at the distance of a few yards from a piece of open water: they generally carried off the heads of the fish, and left the bodies sticking in the net.

The fur is an important article of commerce, seven or eight thousand skins being annually imported into England by the Hudson's Bay company: it very much resembles that of the beaver, having the same general colour; and is of the same texture, that is, composed of very fine waved and shining down intermixed with longer

and coarser hairs. In summer, when the hair is very short, it is almost black; but, as the winter advances, it turns to a beautiful reddish brown, except a spot under the chin, which is grey. Otter fur is nearly of the same fineness with beaver wool; but being shorter, and not so well adapted for making felt, its price fluctuates more with the fashion.

The size is larger than that of the European otter; the adult is generally about five feet long, of which the tail occupies about eighteen inches: it is further distinguished from the common species, by the colour of the belly being the same as that of the back.

The Brazilian Otter.

Lutra Braziliensis, *Ray*. Mustela Braziliensis, *Gmelin*. Sarscovienne de la Guyanne, *Buffon*. Brazilian Otter, *Pennant*.

We know very little of this species, as regards its general history; nor is it certain that the otter of Paraguay, described by Azara, is the same as that found in the rivers of Guiana. Should this, however, be established, it would appear to be an animal capable of much docility, and worthy of being domesticated. Azara observes of one which was in confinement, that it ate fish, meat, fruit, and bread very readily; although the former, from being its most natural food, was always preferred. It was so very tame as to go about the streets, and return to its master's house of its own accord: it knew all the members of the family, and followed them with the attachment of a dog, although a very little exercise was sufficient to fatigue it: it knew and acknowledged its name, and seemed fond of playing with the cats and dogs of the house; but as it sometimes bit very hard in these frolics, no one seemed very willing to join in them. It was never known to attack the poultry, or do any mischief, except to a very young pig, which it would have killed, had it not been prevented. In other respects, the native manners of this and the European

species were almost precisely the same, except that this is gregarious, living in small societies of its own kind.

The size appears nearly equal to that of the Canadian otter; and the fur is described as brown, with the throat generally white, or white tinged with yellow. Several females are said to inhabit a single burrow, in which they breed and rear their young.

The Javanese or Slender-clawed Otter.

Lutra leptonyx, *Horsfield.* Melengsang, or Wargul, *Javanese.* Anjing-ayer, *of the Malays.* Simung, *of the Sumatrese.*

The otter of Java and the Indian islands was first discovered to be distinct from that of Europe by Dr. Horsfield. Both in appearance and manners there is a great resemblance between the two, but this appears a much more ferocious animal; yet, if taken young, and gently treated, it becomes mild and tractable, and in this state it is occasionally seen in the dwellings of the natives. In its wild state, it is found near the sea, on the banks of all the Javanese rivers, but does not appear to extend inland. If attacked, it is extremely ferocious, and defends itself with great courage. Its voice is said to resemble that of a human being when weeping, and it shows great attachment to its young.

The size is smaller than either the European or Canadian otter; but the fur has much the same character. The colour, however, is of a lighter brown, and the claws much more slender.

The Pine Marten.

Martes Abietinum, *Ray. Rich. North. Zool.* i. 51. Mustela Martes, *Linnæus.* La Marte, *Buffon.* Warpeestan, *Cree Indians.* Wappanow, *Monzonies.* Wawbeechins, *Algonquins.* Sable, *American Fur Dealers.* Marten, *Hudson's Bay Sale Lists.*

Of the pine marten, although a native of Europe, our information has been so trivial and defective, that

we are again indebted to Dr. Richardson for making us better acquainted with a British quadruped by observing its habits in America. It is one of the most important fur-bearing animals, in regard to commerce, in the territories of British America, and we accordingly introduce it into our "menagerie," as possessing general interest.

The pine marten of Europe appears, in every respect, to be the same species as that of America; and it is distributed on the latter continent, over all the northern districts clothed with wood, from the Atlantic to the Pacific; it extends, in the same situations, over the Asiatic side of Behring's Straits; but in both continents is either very rare, or entirely unknown, in such parts as are destitute of wood. Particular breeds or races appear to inhabit certain districts; that of Nipigan, for instance, on the north of Lake Superior, has long been noted for its black and valuable marten skins.

The habits of this animal are thus described by Dr. Richardson: — In winter it preys upon mice, hares, and partridges, and in summer upon eggs and small birds. In severe seasons, and when pressed for food, it does not reject carrion, and is very ingenious in discovering the hoards of meat and fish laid up by the natives, which it invariably pillages if the smallest opening is left by which it can enter. When pursued and its retreat cut off, it sets up its hair, arches its back, and makes a hissing noise like a cat: it will seize a dog by the nose, and bite so hard as frequently to deter its adversary from pursuit. The marten may easily be tamed, and it soon acquires an attachment for its master, but it never becomes docile. The flesh is occasionally eaten, but is not much esteemed. The females are smaller than the males. They burrow in the ground.

The fur is fine, is much used for trimmings, and is frequently dyed to imitate sable and other expensive sorts. Its importance as an article of commerce may be estimated from the fact mentioned by Dr. Richardson, that upwards of 100,000 skins have long been collected

annually in the fur countries. Its colour is a dull, pale, greyish brown, or hair-brown, from the roots upwards; dull yellowish brown near the summit, and tipped with dark brown or black; the surface having a considerable lustre: the hair of the tail is longer, coarser, and darker. The yellowish white markings of the throat vary in different individuals. Length of the head and body from eighteen to twenty inches.

The Javanese Genett.

Viverra Musanga, *Raffles, Horsfield.* Musang-bulem, *Malays.* Luwak, *Javanese.*

There are circumstances connected with the economy of this animal, which are peculiarly calculated to awaken our attention, and to excite our admiration of those means by which an Almighty Providence distributes the productions of the earth for the benefit of man. We know not, indeed, whether the living animal has been brought to Europe; but, as it is of a race capable of living in confinement, it might easily be introduced into our menageries.

The native manners of the Javanese genett are very similar to those of the common species. It is most abundant near the villages adjoining large forests, where it constructs a simple nest, like the squirrel, of dry leaves, grass, or small twigs, on the fork of a branch, or in a hollow trunk; hence it sallies forth at night to visit the sheds and hen-roosts of the natives, which it plunders of fowls and eggs. Its depredations are also extended to the gardens and plantations, which it pillages of nearly all kinds of fruit, particularly pine-apples.

"The coffee plantations of Java," observes Dr. Horsfield, "are so greatly infected by this animal, that it has, on this account, obtained the name of the Coffee Rat. It devours the berries in large quantities; and its visits are soon discovered by parcels of seeds which it discharges unchanged. It selects only the ripest and

most perfect fruits; and the seeds are eagerly collected by the natives, as the coffee is thus obtained without the tedious process of removing its membranaceous *arillus*, or covering." But this is not all. The injury which these animals occasion to the coffee plantations are, however, fully counterbalanced in another manner. The berries pass through the stomach of the animal without the least injury to their vegetating powers: they are thus conveyed to spots far distant from where they originally came; and having been selected, by the peculiar instinct of the animal, from among the ripest and best berries, they are more especially adapted for taking root when deposited on the ground, which is at the same time naturally manured for their reception: accordingly, Dr. Horsfield found that this animal "has propagated the coffee plant in various parts of the forests, particularly on the declivities of the fertile hills. These spontaneous groves," he concludes, "of a valuable fruit, afford to the natives no inconsiderable harvest, while the accidental discovery of them surprises and delights the traveller in the most sequestered parts of the island." *

The Javanese Ichneumon.

Herpestes Javanicus, *Desmarest.* Mangusta Javanica, *Horsfield.* Manguste de Java, *Fred. Cuvier.* Garangan, *Javanese.*

The habits of this species have been given at some length by Dr. Horsfield, who, during his residence in Java, had frequent opportunities of studying them. It seems a common animal, and is more particularly found in the large teak forests of that island. Like the Egyptian ichneumon, it attacks and kills serpents with excessive boldness, and its agility is greatly admired even by the natives; it is no less expert in burrowing the ground in pursuit of rats.

When domesticated by being taken young, it is tame and docile, possesses much natural sagacity, and evinces great attachment to its master, whom it will follow like

* Zool. Researches.

a dog: it is fond of being caressed, and frequently places itself erect on its hind legs, regarding every thing that passes with great attention. Its disposition is very restless; and it is constantly fond of carrying its food into the most retired place to devour it: all its habits are very cleanly. It is exclusively carnivorous, and is very destructive to poultry; employing great artifice in surprising the chickens: on this account it is rarely domesticated by the natives: its sanguinary character, moreover, sometimes shows itself in a manner which renders it rather a dangerous animal; and it indulges, at intervals, in fits of excessive violence.

The size and general form are much like those of the other ichneumons. The colour of the fur, throughout, is chestnut brown, minutely dotted with yellowish white; but the head and legs are more of a chestnut colour. The tail is equal in length to the body. It is the *Ichneumon Javanicus* of Geoffroy St. Hillaire; which generic name, however, as belonging to a tribe of insects, cannot be retained in this division of animals.

The Sable.

Mustela Zibellina, *Linnæus.* Sable Weasel, *Shaw.* Sobol, *Russians.* Sabbol, *Swedes, Griff. Cuv.*

The animal which furnishes the beautiful and costly fur, known as sable, appears confined to the north of Europe and Asia; at least, it did not fall under the observation of Dr. Richardson, during his long residence in the fur countries of America. Like the pine marten both in appearance and habits, it frequents only wooded districts, and hunts during the night; but it lives in hollow trees, and not in subterraneous burrows. In a wild state it devours the remnant of carcases left by the bears and wolverines, but is also said to be fond of the fruit of the wild service tree. If pressed by hunger, it will attack and destroy hares, or other similar animals larger than itself; and is said also to kill the ermine and weasel.

In a state of confinement its docility has been illustrated by Steller, who mentions a sable, which he saw in the palace of the archbishop of Tobolsk, which used to quit its master's house, wander about the streets, visit such persons as kindly treated it, and return again to its own home like a dog.

The costliness of its fur frequently tempts the dealers to prepare that of the marten so as to imitate sable; there is, however, one simple method by which the deception may be detected. Marten fur will only lie smooth in one direction; whereas that of the sable will lie smooth in any way that the hairs may be placed. The two animals, however, both in size and colour, are much alike.

The Weasel-Cat.

Prionodon gracilis. *Horsfield.* Felis gracilis, *Horsfield.* Viverra Lesang, *Hardwicke.* Delundung, *Javanese.*

It is not to record this elegant and most interesting quadruped as actually existing in our menageries, that we introduce it in this place, but rather to awaken the attention of those Europeans who may be living in its native country, to the scientific interest which would result from a living specimen being sent to England. It seems one of those important links in the chain of nature, which appear to connect two families of animals otherwise distinct, but which are thus brought into such close contact, that even the scientific observer is almost perplexed to decide whether the characters of one family, or those of the other, are most predominant.

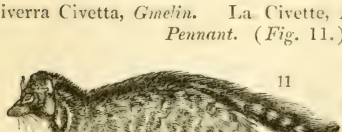
The Delundung, by which name this quadruped is known in Java, was first made known to Europeans by the indefatigable exertions of General Hardwicke, who considered it, although with doubt, as of the weasel tribe, and placed it with those animals accordingly. Dr. Horsfield adopted the same views; but, upon more matured consideration, this naturalist transferred it to the tiger-cats. Still, however, by no means satisfied that

this was its true station, Dr. Horsfield subsequently revised all his former opinions, and finally placed it as a genus intermediate between the two. We cannot, in this place, detail all the different points of structure in which this animal resembles, and differs from, the weasels and the tiger-cats; but a glance at its figure will show, even to the inexperienced naturalist, how much it resembles both, without having such decided characters as to induce us to place it with either. As we have a particular aversion to names which mean nothing, or at least convey no definite idea to the English reader, we have ventured to call this the Weasel-Cat. In its native state it inhabits the vast forests of the eastern extremity of Java: but even there it is of such rarity that Dr. Horsfield was only able to procure two specimens; neither could he learn any thing of its manners or habits from the natives.

The size is small: the body measures about one foot three inches, and the tail something more than another foot. Its body is slender, its head tapering, and its muzzle sharp: the tail is long and thick, and the limbs are slender and delicate. The whole animal is elegantly marked with stripes and bands of deep brown upon a pale yellowish white ground. There is a beautiful specimen preserved in the East India company's museum, and which is figured in Dr. Horsfield's *Researches*.

The Civet.

Viverra Civetta, *Gmelin.* La Civette, *Buffon.* The Civet, *Pennant.* (*Fig.* 11.)



11

The odoriferous substance produced by this animal, although now scarcely known among the perfumes in use

with Europeans, is so much prized by the inhabitants of the East, that it forms with them an important article of commerce. Father Poncel affirms that he has seen, in Abyssinia, near 300 of these animals domesticated, and in the possession of one merchant; that the town of Enfras is celebrated for this trade, and that immense numbers of this animal are there domesticated. It appears also, that, when this perfume was more in demand, numbers of the civet were imported into Holland, and reared for the same purpose. Both trades, however, so far as regards Europe, have very much declined, and even the animal itself is not often seen in menageries.

In confinement, the civet appears to be a remarkably lethargic animal, being described as continually sleeping, and as roused with much difficulty; but this is probably only during the day; since nearly all the carnivorous animals of this tribe are nocturnal, and evince, during the night, the greatest activity. When irritated, the musky odour they send forth is very strong; and from time to time the substance itself falls from the pouch in small pieces, about the size of a nut.

The bag, which contains the perfumed substance, is a remarkable peculiarity in the organisation of the civet; it opens immediately under the tail by a narrow slit, which leads to two cavities, each large enough to contain a nut: the internal surface is slightly clothed with fine hairs, and perforated with small holes, each of which is the orifice of an oval follicle, the surface of which is again pierced with innumerable pores, from which issues the perfumed substance. By means of certain muscles, this substance is made to pass through all these coverings, and finally can be ejected by the animal from the first named orifice, when the secretion has been superabundant. These observations have been made by M. Fred. Cuvier, from specimens which were dissected at the Paris menagerie.

The length of the civet is nearly two feet and a half, the tail measuring one foot. The body is marked by

narrow transverse blackish bands upon a grey ground, parallel on the shoulders, but larger and more irregular on the body and thighs, where they sometimes assume the form of those eye-like spots seen on the panther: the neck has but three black stripes on a white ground; the muzzle is entirely black, except the upper lip, which is white: the tail has only four or five rings of black, and the end, for nearly six inches, is entirely black; while the tail of the zibett has eight or ten rings, and the end is black for only two inches from its tip.

The Zibett.

Viverra Zibetta, *Linn.*, *Gm.* Zibet, *Buffon.*

This animal was long confounded with the true civet; but living specimens of both being in the Paris menagerie, enabled M. Fred. Cuvier to state with precision the differences between them. In a state of nature, it is believed to prey upon the smaller quadrupeds, birds, and reptiles, and occasionally to eat fruits. Like the civet, and all nocturnal animals, it is heavy and stupid during the day, but becomes active as the night approaches. When irritated, it expresses its resentment in much the same voice as that of a cat, bristling up its hairs, and hissing. It seems much less widely distributed than the last, although said to inhabit the same countries by writers who have evidently confounded the two species. It secretes a substance equally strong, and by a similar conformation, to that of the civet.

The colours differ from those of the true civet in several respects. The body is covered with small, round, black spots, upon a grey or brownish ground; whereas those marks in the civet assume the form of narrow, transverse bands: the neck is marked on each side with four black bands on a white ground; and the muzzle, which in the former animal is entirely black, is, in this, grey, with a conspicuous white spot over the eye, which the civet does not possess: the tail is encircled with eight or ten blackish rings, and the end is black for

about two inches only from its tip: these rings, in the true civet, are only four, or, at most, five; and the black at the end of the tail extends to about six inches. These distinctions are amply sufficient to prove the two species to be naturally distinct,—at least, in the opinion of any one who has gained some knowledge of natural history from nature, rather than from books.

The Bengal Tiger.

Felis Tigris, *Linn.*, *Auctorum.*

Of all those animals destined by Providence to support their own life by the destruction of others, the tiger of Bengal is the most ferocious. Before, however, we enter upon any particulars of its history, it may be as well to take a slight survey of those habits and propensities which more or less characterise the whole of this formidable tribe: this will save much useless repetition when subsequently noticing other species frequent in our menageries: it will, besides, give the young student a better insight into the history of this group of animals, than were we to notice, in detached portions, those habits which are alike common to all.

In our domestic cat we have an epitome of the whole race. Elegance of form, gracefulness of attitude, and beauty of colouring, distinguish this little tiger of our kitchen; and although the race has, probably, been domesticated for centuries, that mistrust and wariness, which is so essential to its native habits, has never been eradicated in confinement. Between this little animal, and the more formidable tigers of the tropics, there is not, in point of structure, the least difference; and when we watch a cat hunting a mouse or a bird, we shall have a perfect idea of a Bengal tiger pursuing its deadly propensities in the jungles of Hindostan.

The whole race may be said to delight in butchery; since they will destroy from the mere love of destruction, long after their natural appetite has been sated. Their whole organisation is wonderfully adapted for ra-

pine. Their consummate cunning and address in approaching their prey amply compensates for their deficiency of speed, or, at least, of enduring long continued running: did they, indeed, possess the fleetness of the hare or of the horse, no created being could escape them; but the endowments of Providence are always justly balanced, and in proportion as some are developed, others are withheld. It has been well observed, with reference to this subject, that if the feline race possessed the same social instinct as is seen in the dog, or even the wolf, of herding together and hunting in unison, what could resist such overwhelming destruction? The earth would become almost a desert, and the human race would be driven from some of its most fruitful portions. Like robbers and murderers of the human race, the tigers choose the night for their deeds of bloodshed: at the close of day they quit the caverns or dark recesses of the forest, and, with stealthy pace, prowl the earth, and spring upon their prey with resistless force. The night is no night to them, since their eyes are well known to be brilliant in darkness; while their acute sense of hearing and of smell, joined to the noiseless tread of their feet, gives them every advantage which their cruel instincts require.

The geographic distribution of the feline race is marked by some singular facts connected with that of other quadrupeds, which no writer, we believe, has yet touched upon. There appears to be no question that the continent of Africa is that, above all others, which contains the largest number of quadrupeds, both as regards bulk and numerical amount; Asia stands next in the scale; America is decidedly inferior to both, but exceeds every other region in the surprising number and variety of its birds; while the European range possesses fewer native quadrupeds than either of the preceding divisions. Now, as the feline race are destined to prey, exclusively, upon living animals, we find that they have been distributed by Providence in an exact ratio to the preceding scale. The lion, the most bold and powerful

of the whole tribe, is so scarce in Asia, as rarely to be seen or even heard of; but in Africa, all travellers agree in representing it as peculiarly numerous, even at the present time; and it must have been formerly much more common, since the hundreds which were sent to Rome by order of the barbaric emperors, were all drawn from this continent. To Africa, also, is confined the species or varieties of the panther and leopard, enumerated by major Smith; while the two tigers subsequently described, are the only animals of an equal size that have yet been found in Asia. Hence it appears, that although both these continents are remarkable for large quadrupeds, the preponderance both of the herbivorous and the carnivorous races belongs to Africa. Did we merely look to the number of species of the latter animals found in the New World, the inferences we have drawn would appear fallacious; for, while not more than eight or nine respectively occur in Africa and Asia, there are no less than sixteen already described as natives of America, exclusive of the lynxes: it will be observed, however, that only three of these are of a middling size; and that they prey almost entirely upon the smaller quadrupeds, birds, and fish. The herbivorous *Mammalia* of this continent, in comparison to those of the Old World, are few, and in the temperate and tropical parts are but thinly dispersed. The rest of the American species of *Felis*, amounting to thirteen, are tiger-cats, living almost entirely upon the innumerable birds of this continent of forests, and upon the boundless profusion of fish which swarm in its numerous and majestic rivers. Our own opinions on this head, the result of our personal researches, are fully confirmed by the sentiments of Mr. Burchell, who has explored, with his usual enterprise and skill, a large portion of that continent not visited by us. The American tiger-cats, in fact, are more aquatic than those of any other continent: even the jaguar habitually frequents the neighbourhood of great rivers, and is described as a useful fisher. Mr. Burchell gives us the same account of a

beautiful tiger-cat, at this time alive, and in his possession, at Fulham, which this accomplished traveller brought with him from Parà. It is, therefore, obvious that the distribution of these lesser feline animals is proportioned by Nature to her distribution of birds rather than of quadrupeds. Nor is this theory alone applicable to the zoology of the New World. If we turn to the Asiatic regions, and contemplate the animals of Java and Sumatra,—the islands which have been the best explored,—we find the birds are much more numerous in proportion than upon the continent; while their natural enemies, the tiger-cats, which seem almost excluded from the plains of Hindostan, are here found of no less than four species. The same physical causes to which baron Humboldt has traced the peculiar fertility and the density of the forests in Tropical America, may be traced in a less degree in these islands; and we accordingly find that this similarity is discerned in their leading zoological features.

It may appear inconsistent with the beneficence of a merciful God, that a numerous race of animals should be created apparently for the sole purpose of carrying destruction and death into so many innocent tribes of the animal kingdom, and should pursue, with equal ferocity, that being whom *He* has placed as lord over the whole. Were this assumed violation of justice and of mercy apparent only in this case, we might reasonably be allowed to doubt the goodness of Providence. But although the fact, in the present instance, comes before us in a more terrific shape, yet it is equally strong, and equally apparent, in every part of creation. A mixture of good and of evil is the condition of existence; and the same act which brought sin into the world, and entailed upon man disquietude, disease, and sorrow, terminating in an apparent death—that same act, as we are told by Inspiration, brought with it disorder into every part of creation, and rendered animals not less free from pain, and suffering, and violence, than him

who has been endowed with higher perceptions, but who is destined for nobler purposes.

The tiger of Bengal is at once distinguished from all other ferocious animals, by its formidable size, and its beautiful skin, marked throughout with narrow dark stripes upon a yellowish buff ground. Beautiful as it is in apppearance, it may be considered the emblem of savageness and butchery, since it delights in slaughter even after its hunger has been satisfied. It will kill as many victims as come in its way, for the mere purpose of sucking their blood; and although instances are on record, where, under peculiar circumstances, this monster has been partially tamed, its natural disposition is almost incapable of improvement.

In its native state, the tiger is the scourge of India and the adjacent islands. In size it is equal to the lion, and it possesses both the courage and the ferocity to attack that animal; but, although the combat is sometimes furious, the tiger generally falls a victim to its temerity. Its swiftness and strength are so great, that it will seize a mounted horseman, and drag, or rather carry, him in its mouth, by bounds and leaps, into the forest, in spite of all missiles short of musket balls: indeed, the weight of a man, or even of a bulky quadruped, in its mouth, does not appear to incommode or delay the ordinary swiftness of this terrible creature. Mr. Marsden, the enlightened and veracious author of *The History of Sumatra* affirms that the tigers of that island are fatal and destructive enemies to the natives, not only in their journeys, but even while engaged in their domestic occupations, so that the number of lives so lost is almost incredible: whole villages, in fact, are sometimes depopulated. The increase, however, of these destructive beasts seems to be almost entirely owing to the superstitious feelings of the natives, who are with difficulty persuaded to destroy them, even by large rewards offered by the India company. It seems, however, that when roused, by sustaining injury in their own family, these people contrive several ingenious

modes of catching the tiger. One of these is a trap, like a large strong cage with folding doors, into which the animal is enticed by a small quadruped put in as a bait. Another, very effectual, is made of a large beam so constructed as to fall into a groove and break the tiger's back; or a plank, nicely balanced, is placed in a sloping direction, which, by turning when the animal has passed the middle, precipitates him into a pit filled with sharp stakes. The tigers of this island, which seem to be of an unusually large size, are said to break the legs of a horse or buffalo by a single stroke of the fore paw, and to drag the body without difficulty into the forests.*

The manner in which the tiger seizes its prey, was fully exemplified by a full grown individual, which, Major Smith informs us †, was lately exhibited at Madras. The animal was so far tamed, as to be held merely by a chain; it was, indeed, kept muzzled, except when it was occasionally allowed to make an attack on some animal for the gratification of the spectators. For this purpose, a sheep was fastened by a cord to a stake. The tiger, upon being brought out, instantly couched, and moving almost on its belly, but slowly and cautiously, till within the distance of a spring from its victim, leaped upon and struck it down almost instantly to death, seizing it at the same moment by the throat: the tiger would then roll round on its back, holding the sheep on its breast; and fixing the hind claws near the throat of the animal, would kick or push them suddenly backwards, and tear it open in an instant. Notwithstanding the natural ferocity of the race, the individual in question was so far subjugated, that while one keeper held the chain during this bloody exhibition, another was enabled to get the carcase of the sheep away, by throwing down a piece of meat.

When captured quite young, and judiciously treated, some instances have occurred, where the tiger has exhibited nearly as much gentleness as the lion under similar circumstances. Three specimens in the Paris

* Major Smith, in Griff. Cuv. ii. 442. † Id. ibid.

menagerie, as well as others that have been in the possession of Mr. Cross, have been cited as instances of this, and as proofs that Buffon's assertion of the tiger's untameable ferocity is rather an exaggeration. This docility has been evinced by these animals showing an obvious attachment to their keeper; and in one instance to a dog, which the tiger fostered and protected. The females have been known to breed in confinement; and even a hybrid race has been produced between the African lion and the Indian tiger.

The Puma, or American Lion.

Felis concolor, *Linnæus.* Le Congouar, *Buffon.* Gouazouara, *Azara.* Mitzli, *Mexicans.* Puma, *Peruvians.*

This animal, the largest of the carnivorous quadrupeds of the New World, has received the name of the American lion, more on account of its corresponding uniformity of colour, than from any close resemblance of structure, since it is entirely destitute both of a mane and a tuft on the tail: its head also is small, and it thus assumes all the form and contour of the generality of the species: it is longer in the body, and lower on the legs, than the lion; and measures, from the nose to the root of the tail, about five feet.

Our information on the native habits of the puma is chiefly derived from the valuable notices of the Spanish naturalist, Azara, who describes it under the name of *Guazouara.* He mentions it as less ferocious and formidable than the jaguar; and he considers it rather a timid animal, since, so far from its being known to attack either men, or even dogs, it avoids both. Its chief prey consists of the smaller quadrupeds, as sheep or calves; but against these it has a most ferocious nature: it will destroy several, but will only carry off the body of one. Like several other carnivorous animals, the puma will conceal the overplus of its food for a second repast; a peculiarity of economy which does not appear to belong to the jaguar, the next in rank among the ra-

pacious quadrupeds of the New World. Both these, as will subsequently appear, seem to climb trees: although Azara states that the puma alone ascends the highest trees with celerity and ease; he likewise considers it more as an inhabitant of the plains than of the forests.

The following story is so totally irreconcileable with the timidity of this animal towards man, attributed to it by Azara, that we are much inclined to doubt whether there may not be two distinct races, or varieties, perhaps, of this species in America,—one inhabiting the north, the other the south. The story, however, seems well authenticated, since it has been given us by major Smith, who saw the skin of the animal itself preserved in Mr. Skudder's museum at New York. It may be thus abridged:—Some few years back, two hunters, each with a dog and gun, went on the Katskill Mountains in pursuit of game. Arriving there, they agreed to separate; but settled that, so soon as one fired, the other should join his companion as quickly as possible. Shortly after this, one of the party, hearing the other fire, hastened with all expedition to the spot: his companion, however, could no where be found; but, after much search, his dog was discovered dead, and dreadfully torn. Becoming more alarmed for the fate of his companion, the remaining hunter was continuing his search, when his eyes were suddenly directed, by the deep growl of a puma, to the large branch of a tree, where he saw the animal couching on the mangled body of his friend, while his eyes glared upon him, apparently hesitating whether to attack the survivor, or to relinquish its prey and take to flight. It was a moment of imminent danger; life or death seemed to hang upon the action of an instant. Courage, however, did not forsake the hunter: he fired; and the sanguinary murderer, still grasping his prey, fell upon the ground mortally wounded. The surviving dog immediately flew at the prostrate beast, but was laid dead by its side, by a single blow of its paw. In this state of things,—his comrade dead, and the wounded animal still capable of inflicting such re-

venge,—the survivor hastened to procure assistance from the nearest spot. Several persons accompanied him on his return. They then found the unfortunate hunter, the puma, and both of the dogs, all lying dead together.*

The ferocity of the puma in devouring its food has been illustrated by major Smith, who cites the following extraordinary instance, which he himself witnessed:—A puma, which had been taken and confined, was ordered to be shot; and the time fixed upon was immediately after the animal had received its food. The first ball went through its body: the only notice he took of it was by a shrill growl, at the same time doubling his efforts to devour his food, which he actually continued to swallow, with quantities of his own blood, until he fell.

When taken captive at an early age and domesticated, the puma, however, seems capable of all the docility and playfulness of a domestic cat. A tame one, mentioned by Azara, was as gentle as any dog. It was fond of play; and if an orange was presented to it, would strike it with its paw, push it away, and seize it again, as a cat would play with a mouse. It had all the manners of a cat when surprising a bird, not excepting the agitation of the tail; and when caressed, it purred in the same manner. Major Smith also mentions having seen a puma which was particularly tame. It was merely secured by a chain, and lived in a waggon, under the seat of its keeper. When about to be fed, a piece of meat was flung into a tree, and his chain being coiled, the animal was desired to fetch his food: this task he immediately performed with surprising ease and docility, by two or three bounds. The same accurate observer remarks, in drawing a comparison between the physical powers of the jaguar and the puma of the New World, that the latter is of the most cruel and sanguinary disposition in a state of nature, though easy to be tamed; yet it is inferior to the jaguar in bodily powers, and still more in energy and courage.

* Griff. Cuv. ii. 438.

The Jaguar, or American Once.

Felis Onca, *Gmelin.* (*Fig.* 12.)



This formidable species, the most powerful of all the American carnivorous quadrupeds, is but little inferior in size to the tiger of the Asiatic continent. In its marking, however, it more resembles the panthers and leopards of Africa, particularly in the spots or rings; but those towards the back of the American animal have a central black dot, which is never seen in the two former animals. The tail also, in this, never reaches further than to the ground; and this is considered by major Smith as one of the best distinctions between these animals.

The native manners of the jaguar have been described by various writers, but more especially by Azara. It preys upon animals of the largest description, as cows and young bulls, but horses appear to be its favourite game. It destroys these bulky quadrupeds by leaping on their back; and by placing one paw on the muzzle and one upon the head, they exert such force as to break the neck of their victim in a moment. They will then drag the carcase with their teeth to their den, which is often at a considerable distance. Like most of the American *Felinæ*, the jaguar is described as an excellent fisher: it is certain that it swims remarkably well; but we know not upon what authority it has been stated that the jaguar will stand in the water, out of the stream, and drop its saliva, which, floating on the

surface, attracts the fish ; these are seized by the paw, and thrown on shore for food.

Azara relates the following circumstance, as happening in Paraguay :—Having been informed that a jaguar had attacked a horse very near where he was, he hastened to the spot. He found the horse not only dead, but partially devoured ; although the jaguar, from having been disturbed, had retired. Our historian directed the body of the horse to be removed within musket-shot of a tree, in which he intended to pass the night, naturally supposing that the jaguar would return towards evening and carry away the carcase. Before this could be arranged, the animal actually made his appearance from the opposite side of a broad and deep river, and, in the sight of the person who was left in concealment to watch the dead horse, seized it with its teeth, drew it with ease to the river's edge, swam across, and then dragged it into a neighbouring forest. Azara likewise mentions, that the natives frequently fasten two horses together while grazing, and that the jaguar will sometimes kill one, and, in spite of the exertions of the other, draw both into the wood.

Of its habits in captivity we can find no authentic records, although we believe it is by no means rare in European menageries.

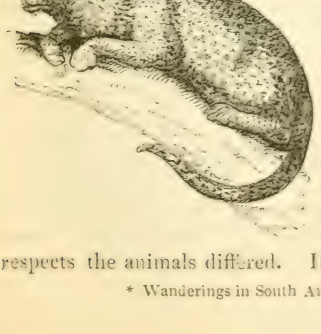
There seem to be two, if not three, varieties, some of which may probably turn out to be distinct species. The *first* of these, which major Smith considers to be the Popé of Azara, measured two feet ten inches in height at the shoulder : the lines of lengthened spots on the back are not quite full, and the marks on the sides are very irregular and indefinable. This description was taken from an old male, killed in Surinam. The *second* variety, or small jaguar, was two feet two inches high : its general colour was paler and more ashy than the last, and marked with five distinct rows of large annulated spots on the sides. The *third* is a black variety found in Brazil : it has the same spots and marks as the others, on a ground of browner black ;

so that the markings are only visible on close inspection, or in certain directions of light. Azara mentions a white jaguar; but this was accidental.

Mr. Waterton, in his amusing *Wanderings*, occasionally mentions the jaguar, as an animal which rather flies before the face of man, than as being prone to attack him. Alluding to one which approached their fire when encamped on the banks of the Essequibo, our eccentric traveller thus continues: — "Whenever the fire got low, the jaguar came a little nearer; and when the Indian renewed it, he retired abruptly: sometimes he would come within twenty yards; and then we had a view of him, sitting on his hind legs like a dog: sometimes he moved slowly to and fro; and at other times we could hear him mend his pace, as if impatient. At last the Indian, not relishing the idea of having such company, set up a most tremendous yell. The jaguar bounded off like a racehorse, and returned no more. It appeared by the print of his feet, next morning, that he was a full grown one."* This anecdote sufficiently shows how much less ferocious is the jaguar, when compared to the Asiatic tiger.

The Leopard.

Leopard, *Cuvier*. Felis Leopardus, *H. Smith*, in *Griff. Cuv.* (*Fig.* 13.)



13

Although the names of leopard and panther have been long familiar in common language, and have conveyed the idea of two distinct species, yet it is perfectly clear that no scientific writer of the last generation either described, or, indeed, appeared to know, in what respects the animals differed. It seems that numerous

* Wanderings in South America, p. 223.

specimens of what is called the leopard, are in the Zoological Gardens, and one has been figured in the book so entitled; but Mr. Bennett has not made the slightest attempt to investigate the subject, or to throw any light upon this difficult question. In this dilemma we shall therefore repose on the opinions of major Hamilton Smith, whose long experience and accuracy of observation are well known, and whose authority in this department of nature deservedly ranks above that of any other naturalist of this country.

The Leopard, as defined by major Smith, when compared with the jaguar and the panther of naturalists, is uniformly of a paler yellowish colour, rather smaller, and the dots rose-formed, or consisting of several dots partially united into a circular figure in some instances, and into a quadrangular, triangular, or other less determinate forms in others: there are also several single isolated black spots, which more especially occur on the outside of the limbs.

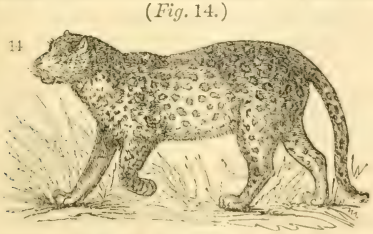
The Panther, according to professor Lichtenstein of Berlin, "resembles the jaguar in having the same number of rows of spots, but is distinguished by having no full spots on the dorsal line." But, as major Smith observes, it does not appear that full spots on the dorsal line always make a specific character of the jaguar; and the Asiatic leopard is sometimes distinguished by this peculiarity, though it does not in other respects resemble the American animal. When, therefore, it is said that the panther much resembles the jaguar, it is always to be strongly suspected that the type, whence the observations have been taken, is (in reality) an American animal.

On the habits of the leopard, both in a state of nature and in confinement, we have no precise information otherwise than as relates to those traits common to the whole family; but we may hope that the observations of Mr. Burchell and Dr. Andrew Smith, as yet unpublished, on the quadrupeds of Africa, will supply us with some authentic facts.

The scientific description given by major Smith of the leopard, is as follows: — "Fur, bright yellow on the upper part, white underneath, with at least ten ranges of small black clusters of spots on each flank: lower part of the tail, for about one third of its length, black above, white underneath, with five or six white annuli on the black part. Rather smaller than the panther." * Our own opinion on the specific dissimilarity between the leopard and the panther, judging from what has been written upon the subject, is in perfect unison with that of major Smith; while the following remark of that observing naturalist, incidentally inserted in his account of the panther of antiquity, seems to us almost conclusive: — "The open spots which mark all the panthers, have the inner surface of the annuli or rings more fulvous (in other words, darker) than the general colour of the sides: but in the leopard no such distinction appears, nor is there room, as the small and more congregated dots are too close to admit it." In truth, if there is any reliance to be placed in the most accurate figures hitherto published, the small spots of the leopard, and the large ones of the panther, must strike even a casual observer, and lead him to believe that the two animals were called by different names.

The Panther.

Felis Pardus, *Linn.*, *Hamilton Smith.* Panthère, *Cuvier.* (*Fig.* 14.)



The panther and the leopard, as before observed, resemble each other so closely, that if professed naturalists

* Syn. of Mam. p. 165.

are unable to agree on their respective distinctions, it cannot be expected that the ordinary visiters of menageries will be rightly informed on the subject by the proprietors of such shows. Hence it follows that the American jaguar is often called by these people a panther or a leopard; an error which even Buffon has himself committed. This, indeed, has long been rectified; but until better information comes before us, we shall adhere to the opinion above expressed on the specific difference of the panther from the leopard.

The panther, as defined by major Smith, from an inspection of several contained in the Paris menagerie, is much more closely marked with spots than the leopard; and the differences are further pointed out in the following specific character, which may be contrasted with that assigned to the leopard. — Pale yellow above, with six or seven lines of rose-formed dots, which form clusters of five or six spots on each flank: tail longer than that of the jaguar; with the latter part black above, and white beneath; having three or four white annuli on the back part. Inhabits Northern Africa.

We earnestly recommend such of our readers as feel an interest in the subject, and who may have the opportunity of seeing living or dead specimens, to ascertain how far the above distinctions are to be relied upon; as well as those by which the next animal, supposed by the same authority to constitute a third species, appears separated from the two preceding.

Panther of the Antients.

Felis Pardus Antiquorum, *Hamilton Smith*, in *Synopsis of Griff. Cuv.* p. 166.

This species, if such it really be, is supposed by major Smith to be the animal known to ancient writers by the name of *Panthera*. It is, however, now so rare, or has been so little distinguished, that major Smith is only acquainted with one example, in the museum of the elector of Hesse Cassel, in whose menagerie it had

probably lived. Nothing was known of its native country or of its manners; but we introduce it here, that our scientific readers may have the means of detecting and investigating the external distinctions of this and the two preceding animals.

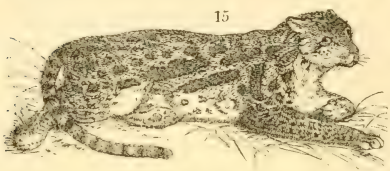
Major Smith describes the length of this panther as five feet three inches from the nose to the root of the tail, and the height as two feet nine inches at the shoulder: it thus stands higher than the great jaguar; but its form, from being more slender, assimilates to that of the *Felis Jubata*, or hunting leopard, though it is much larger in proportion. The head is smaller than that of the jaguar; thus agreeing with the usual character of such species as belong to the Old World. The first and great difference, however, which distinguishes this from all its congeners, is the ground colour of the fur; the entire colour of the whole animal being buff yellow, becoming darker, and approaching to red on the nose, and to ochre on the back and sides: the belly and insides of the limbs partake of this general colour, but are paler, there being no white part about the animal. On the sides of the body are seven rows of imperfect rings, the inner part of which are more fulvous than the general ground colour of the fur where these spots do not occur: the dorsal line is marked in the same manner by open rings. These rings, or annuli, observes our author, differ from those of the jaguar, to which they otherwise bear a general resemblance, in being all nearly circular; whereas those of the American species become oblong as they approach the dorsal line: they are also smaller when compared with the size of the animal, and much more numerous,—covering not only the back, ribs, and haunches, but descending on the outside of the legs as far as the knees: the annuli, moreover, of the jaguar have a spot in the centre, which these have not: the tail of this is spotted from beginning to end — that of the jaguar has open oblong marks some way down, and is terminated by encircling annuli of black, yellow, and white. To conclude, the forehead, cheeks, sides

of the neck, shoulders, throat, and inside of the limbs are covered with numerous close small spots; and there is a narrow black bar crossinge th lower part of the throat. These characters are thus seen to be intermediate between the jaguar of America and the panthers and leopards of the Old World.

The True Ocelot.

Felis Pardalis, *Linn.*, *H. Smith.* (*Fig.* 15.)

15



There seems to be as much uncertainty regarding the different species or varieties of the ocelots, as that we just noticed respecting the leopards and panthers. We shall not, however, enter into lengthened scientific details; but avail ourselves of the general observations made upon the whole group by the accomplished naturalist, so often cited, who has so ably investigated this family.

The ocelots in general, as a small but very natural group among the middle-sized carnivorous animals, are distinguished by yellow spots more or less oval, bordered with black. Some writers, among whom is Azara, consider that all may be referred to one species; while others, with major Smith, are more disposed to view them as a group, composed of five or six permanent races. To this latter opinion we are more disposed to agree than to the former.

Major Smith gives us the following interesting observations upon these animals: — "My present views of the ocelots are, that they form a subordinate group in this family. I would describe them, generally, as being of a middle size between the larger and the small

cats; of more slender and elegant proportions, without tufts on the ears; the spots diverging more or less in concatenations or streaks from the shoulders backwards and downwards; and, as far as I have hitherto observed, the pupil of the eye is round. They belong to the New World; but there are two or three species of the Old, that approach them in several particulars, and therefore might make the next group."* After enumerating with great precision the external markings of four differently coloured ocelots, our author thus concludes: — "Whether these are specifically different, or hereditary varieties, I do not mean to determine; but, from the number of specimens of each that have fallen under my observation, there seems little doubt that one of the alternatives is correct, and that the several figures are not mere individual differences."

The true ocelot, according to these views, and to which the original Linnæan name of *Pardalis* is retained, is very rare, since only two specimens have been seen by major Smith; one of these was formerly in Bullock's Museum, and was supposed to come from Southern Mexico or Honduras. This is considered to be one of the animals mistaken by Buffon, and by the famous compiler Dr. Shaw, for the American jaguar.

The colour on the nose is fulvous: and this tint spreads over the forehead, shoulders, fore-arm, back, rump, and paws: the temples are ochrey, and the rest of the animal white. There are no black streaks on the forehead; but a number of small round spots cover the whole surface, and two broken streaks run from the outer angle of the eye to below the ear: on the shoulders and flanks there are four or five long, open, fulvous spots, bordered with a chain of black: on the rest of the body, back, and hams there are small open spots: the tail is annulated, and the tip black: on the fore legs and the lower part of the hind legs are small black spots.

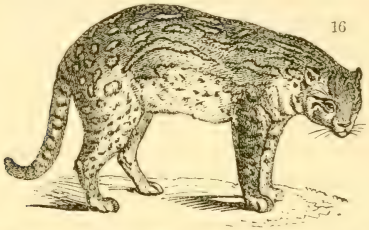
These characters we shall condense in the following

* Griff. Cuv.

specific character, which differs somewhat from that proposed in the *Synopsis* : — Nose, paws, and upper portion of the body and limbs fulvous : temples ochrey : ground colour white : shoulders and flanks with four or five long fulvous spots, margined with an interrupted black border : back, rump, and hams with smaller and more circular spots : forehead covered with numerous small, black, entire spots.

The Greyish Ocelot.

Felis canescens, *Nobis.* Felis Ocelot γ, or Ocelot No. 3., *of Hamilton Smith, Griff. Cuv.* ii. 476. Felis Macrourus? Long-tailed Tiger-Cat, *Swains. Zool. of Mexico*, p. 5. (*Fig.* 16.)


16

To this ocelot, described by major Smith, but merely designated by a number, we have given, conditionally, a specific name, — a plan which is more convenient to the zoologist, and preferable to the usual mode pursued on these occasions ; since it will convey some idea of its peculiarities, and may be retained either to designate it as a species or as a variety. The whole of these beautiful, and to a certain degree domestic, animals are highly worthy of being imported into our menageries ; and considering the great number of our countrymen now settled in various parts of South America, whence all the ocelots yet known have been brought, we make no apology for bringing them more immediately under notice. There can be no doubt that several of these smaller cats are fully capable of as much docility as that species which has been so long domesticated ; and we cannot conceive a more desirable naturalisation, than to

see one of these beautiful animals reposing with equal serenity upon our hearth.

The greyish ocelot is thus described by our author, but the precise dimensions he does not mention.— It is smaller than the *F. mitis* of Paraguay, and has the nose, forehead, neck, back, shoulders, fore part of the fore legs, and rump ashy, mixed with ochrey: the streak from the inner angle of the eyes to the ears has only one row of spots within it: the long open spots on the neck and back are shorter, less diverging, fulvous within, but without any spot on the fulvous: on the fore legs only there are a few large spots; on the hams there are some round, open, and a few small, black, wavy spots: the tail is altogether or nearly fulvous, ringed with black; the tip is white: the eye has a black ring; and there are two black streaks on the nose: the cheeks have a large spot; and there are two bars, with white between them, running from the outer angle of the eye to below the ear: across the throat, also, are four black bands." Of this, major Smith has examined five or six specimens.

A small tiger-cat, once in Bullock's Mexican exhibition, is considered by our author as a young female of this species. The accuracy of this opinion we are disposed, however, to question. It was our intention to have published a scientific description of the whole of the zoological subjects there collected; but circumstances, not necessary to explain in this place, suspended this design, which was only partially executed. The individual alluded to by major Smith, we have, however, described: it appeared to us, at the time, to agree more with the account given of the long-tailed tiger-cat of Brazil, than with any other, and we termed it so accordingly. As very few copies of this incomplete work were made public, we shall here repeat our former description, which will be seen to differ very greatly from that given by major Smith.

The long-tailed tiger-cat of Mexico is not much larger than the domesticated species, and is remarkable for the length of its tail. The head is small and short.

The ground colour of the upper parts of the body is pale fawn, beautifully marked by about five series of spots on each side: those nearest the back are entirely deep black, but on the sides they are more oblong, and become ocellated or ringed; while on the shoulders they take the form of three waved perpendicular ocellated stripes: the legs are banded by small transverse spots, nearly round. All the under parts are white, and covered with small black spots, except the throat, which is crossed by two black lines: the cheeks are white, marked by black stripes: four other stripes are also on the back of the neck, two of which commence from the eyes: chin white, and unspotted. Tail eleven inches long, and ringed with dusky white and black. The whole animal stands but six inches high; and measures, with the tail, two feet ten inches in extreme length.* The collection was soon after dispersed; and not knowing into whose hands this specimen has now passed, we have lost all power of again investigating its characters.

The Small-spotted Ocelot.

Felis Smithii, *Nob.* Ocelot No. 2., *Hamilton Smith.* (*Fig.* 17.)



17

The third species of this beautiful group we wish to designate by the name of that naturalist, whose intimate acquaintance with the *Mammalia* generally, and with the present family in particular, justly places him as the

* Zool. of Mexico Illustrated, p. 5.

first authority upon these subjects in this country. We shall give its peculiar distinctions in his own words, and trust that, ere long, we shall be able to record something more of the native habits of the ocelots in general than we can at present communicate.

"The size is about that of the *Felis mitis* of Desmarest (Ocelot No. 1.), but the rufous colour spreads over a larger space on the back and hams, while the spots on the shoulders are more numerous and smaller. There is one large spot on the cheek, and four or five small, open, chain-like spots on the hams. There are no specks within the large streaks." All the foregoing species have been admirably etched by Mr. T. Landseer, from the original drawings of major Smith.

The Clouded Tiger.

Felis nebulosa, *H. Smith*, cited in *Griff. Carnivora*, p. 37. Nebulose or Clouded Tiger, *Griff. Cuv.* ii. 499. Felis nebulosa, *Griff. Syn.* No. 420. Felis microcelis, *Temminck, Horsf., Zool. Journ.* ii. 542. Rimau-Dahan, *of the Sumatrese.* (*Fig.* 18.)



18

The Clouded Tiger of major Smith, we shall consider, at present, as the same species with that called Rimau-Dahan by the inhabitants of Sumatra. And, with this impression, we shall condense the interesting account of its manners given by sir Stamford Raffles and Dr. Horsfield, in their notice of the rimau-dahan.

The mature size of this new and very remarkable tiger has not been correctly ascertained, since the individual examined and measured by Dr. Horsfield seems only to have acquired about two thirds of its mature size and bulk: if this calculation be correct, the full-grown animal would measure about four feet from the nose to the base of the tail; the tail itself would be

three feet six inches; and the greatest height, at the shoulders, nearly one foot ten inches. It would thus be much inferior to the full-grown tiger of Bengal; while the following anecdotes will show how totally it differs from that savage animal in disposition.

Sir Stamford kept two of these animals in confinement; and both were so remarkable for good temper and playfulness, that no domestic kitten could be more so; they were always courting intercourse with casual passengers; and in the expression of their countenance, which was always open and smiling, showed the greatest delight when noticed,—throwing themselves on their backs, and delighting in being tickled and rubbed. On board the ship, which conveyed one of these to England, was a small dog, which used to play round the cage with the tiger; and it was amusing to observe the playfulness and tenderness with which the latter came in contact with its little companion. When fed with a fowl that had died, he seized the prey, sucked the blood, and then threw the body about, in playfulness, for hours, as a cat plays with a half-dead mouse. It never seemed to look upon men or children as prey, but as companions. It was constantly amusing itself, during the voyage, by jumping and clinging to the top of the cage, and throwing a somerset, or by twisting itself round in the manner of a squirrel when confined,—the tail being extended, and showing to great advantage when so expanded. Dr. Horsfield continues the history of this most interesting animal, by stating that, on its first arrival at Exeter Change, and for about ten days after, it was very shy, and showed considerable symptoms of ferocity; but the strangeness of its situation, the noise it heard in the menagerie, the novelty of the scenes around it, as well as of the attendants, doubtless influenced its manners, alarmed it, and in some degree caused it to resume a degree of fierceness, which had long been subdued by kind treatment. It soon, however, became mild and tractable, and even perfectly familiar: it was very playful, and rolled itself about when noticed

or caressed. Unfortunately, however, it did not long survive the ungenial effects of this climate, and its death was hastened by disease connected with cutting its teeth.

In its native state, the clouded tiger is neither an object of terror nor of apprehension. Sir S. Raffles says that the natives of Sumatra assured him that it lives principally upon poultry, birds, and small deer. It is not found in numbers ; and may be considered rather a rare animal, even in the southern part of Sumatra. It is generally found in the vicinity of villages, where it is only annoying to the natives in so far as it may destroy their poultry. The natives assert that they sleep, and often lay wait for their prey, in trees: from this circumstance they derive the name of *Dahan*, which signifies the fork formed by the branch of a tree, across which they are said to rest, and occasionally stretch themselves.

The following short description, abridged from the more ample one given by Dr. Horsfield, will sufficiently distinguish this species from any other: — The ground colour of the *Rimau-Dahan* is whitish grey, inclining to cinereous or to brownish grey ; one of the chief peculiarities being the almost entire absence of yellow or red in the external tint. The marks on the body are oblong, irregular, very broad, and transversely disposed and connected on the shoulders, but interrupted and angular on the sides and flanks: all these, however, have their posterior edge margined only by a deep velvet-black line. This peculiarity alone will enable a common observer immediately to recognise the animal.

The tortoiseshell or clouded tiger (*Felis nebulosa*) of major Hamilton Smith and Mr. Griffiths, is considered by Dr. Horsfield as, in all probability, a distinct species from the rimau-dahan of Sumatra, to which he therefore gives a new name, borrowed from M. Temminck. Mr. Griffiths, on the part of major Smith, has entered into some very sensible observations on the subject. Until better evidence comes before us, we are clearly of

opinion with this gentleman, that the two animals, at best, are but slight varieties; and, with this feeling, we cannot but adopt the prior name given by major Smith, in preference to the new one of Temminck. Major Smith, indeed, expressly states *, that M. Temminck acknowledged having received the first information of the existence of this species from him, although the professor chooses to impose upon it a new name of his own. This is not the only instance, we may observe, of M. Temminck appropriating to himself the discoveries of others. "But should the identity of these two animals be established, it is obvious that, though the first detailed description of it is due to Dr. Horsfield and sir Stamford Raffles, the first notice and liberal communication of its figure to zoologists, long before, both here and on the Continent, is attributable to major Smith. It would, therefore, be a slight and an injustice done to him, to cancel the name of *nebulosa*, and with it the memorial of his first knowledge and drawing of the animal." †

The Once.

Felis Uncia, *Gmelin.* Once, *Buffon*, *H. Smith.*

The Once or Ounce of Buffon bears such a close resemblance to some of the varieties of the panther, that M. Cuvier does not consider it in any other light. But major Smith, whose researches seem to have been unwearied, discovered an animal in the Tower menagerie, which corresponds both with Buffon's figure and with the subsequent accounts of the ounce. It was brought from the Gulf of Persia, and was "very distinct from all other species in make, mark, and in general appearance." It is much to be regretted that this able zoologist has not entered into further particulars; but, judging from the figure engraved from his drawing, we should term it a lower and more thick-set animal than the panther; the spots larger, more irregular, and much

* Griff. Cuv. ii. 453. † See Griff. Cuv. ii. 454. note.

fewer; but differing more especially in having the tail decidedly annulated with black rings, while those of all the panthers are spotted: the body is described as whitish; while yellow or fawn-colour is the universal tint both of the panthers and leopards.

The Serval.

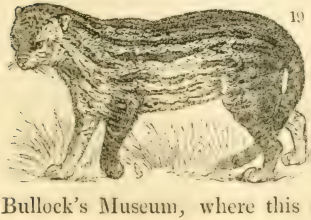
Felis Serval, *Gmelin, Cuvier.* Chat-Pard, *Perrault.*

As the serval is one of the very few species belonging to the group of ocelots which has yet been discovered in Africa, we deem a slight notice of it will not be unacceptable. It is the *Chat-Pard* of the French, and the tiger-cat of the English furriers; and M. Cuvier incidentally mentions that hundreds of its skins are imported from Southern Africa. Strange! that, of an animal so common, not the least information exists of its habits or manners.

The size of the serval ranks it with the middle-sized species, — being about two feet and a half long, without the tail, which is nine or ten inches. The ground colour of the fur is bright yellow, or fulvous, more or less inclined to grey, and yellowish round the tips; the under parts are whitish: the bands and spots are larger or smaller, and more or less numerous, in different individuals.

The Linked Ocelot.

Felis catenata, *H. Smith. Griff. Cuv. Syn.* p. 168. (*Fig.* 19.)



19

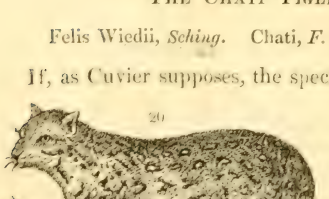
Major Smith was the first naturalist who made us acquainted with this very elegant ocelot, which had probably been in some of our travelling menageries unknown to science, and subsequently found its way into Bullock's Museum, where this acute observer detected

it: he also met with another specimen in the Berlin Museum, and made it known to the Prussian professors. Landseer has executed a masterly etching of it, from the major's drawing, which will be found in the work above referred to.

Size of the wild cat. — General proportions shorter and heavier than those of the true ocelot. The upper parts and sides reddish yellow, the lower white; temples ochrey. Several rows of black spots converge from the ears to the forehead. On the shoulders, back, side, rump, and hams, are long chain-like streaks of black and reddish brown intermixed. The belly and throat have black streaks; and the tail has imperfect black rings.

The Chati Tiger-Cat.

Felis Wiedii, *Sching.* Chati, *F. Cuvier.* (*Fig.* 20.)


20

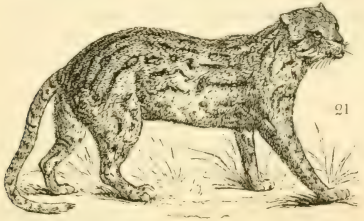
If, as Cuvier supposes, the species of tiger-cat, called by his brother the *Chati*, is the same as that discovered by Prince Maximilian of Neuwied, in Brazil, and named, in his honour, by *Sching*, that name should, without doubt, be retained; not, however, having the means of establishing this supposed identity, we shall confine our notice to the description of Frederick Cuvier's *Chati*, and which he has figured in his folio lithographic work on quadrupeds. It is stated to be more than one fourth less than the *Felis mitis* of Desmarest, and is even less than the common wild cat: the head measures only four inches and a half, the body eighteen, and the tail ten; the height being eleven inches.

The ground colour of the fur is brownish grey, paler

on the flanks, and white on the cheeks and belly: the head and ears have black and white spots, and three series of the former pass down the back; those of the flanks, shoulders, and crupper are deep yellow, bordered all round with black, except at the anterior edge; and of these there are seven or eight; while some of the shoulder spots unite, and form an oblique band; those on the feet are smaller, and they disappear altogether upon the toes; but the spots on the belly are full and cloudy: the tail has ten or eleven black rings.

The Long-tailed Tiger-Cat.

Felis Macrourus, *Prince Maximilian, H. Smith.* (*Fig.* 21.)



The remarkable length of tail seems to be the most striking characteristic of this species, discovered by the Prince of Neuwied, during his researches in Brazil. We have not ourselves seen an authentic specimen; but, as the above structure was equally apparent in an individual brought from Mexico, we are still disposed to consider our designation of this latter animal, already alluded to, as correct. Major Smith appears, however, to have examined two undoubted specimens of the Brazilian race; and his description may be compared with ours. It seems to be little larger than the common domestic cat.

The neck is long and thick; the face very short; and the tail about a fourth longer than that of the inked ocelot. The face, neck, back, shoulders, rump, and hams are ochrey grey, streaked and marked with

from three to four rows of large black spots, describing somewhat irregular figures. The tail is semi-annulated, with the tip black. Two streaks under each eye run to the angle of the jaw; and one above, to the ear. There are some spots on the forehead and cheeks; and others, still larger, on the paws.

On comparing the above description with that of our long-tailed Mexican tiger-cat, we certainly consider that each relates to a different species. The chief difference is in the spots, which, in that from Mexico, are ocellated, or forming irregular rings; while those of the Brazilian species are in masses: in this latter, also, the spots on the feet or paws are described as large; whereas in the other they are small. The length of tail, judging from the figure of *Macrourus*, is less than in that of the Mexican animal; but as major Smith has not given any dimensions, this point is uncertain.

The Lineated Cat.

Felis lineata, *Nobis.* Felis colocolo, *H. Smith.* Colocolo? *Mollini.*

This is one of the most beautiful animals of the whole family, and is so remarkable in its external appearance, that it would be immediately recognised by a common observer. It seems also to be a rare species; and thus deserves, in every way, a particular notice.

This fierce animal, observes major Smith, was shot in the interior of Guiana, by an officer of a rifle corps, and was by him stuffed and sent to England. A whimsical occurrence took place with it: — The officer who had shot it, placed it on the awning of the boat to air, as he descended the river Parimaribo: the boat often passed under the branches of large trees which overhung the water, and which were much resorted to by monkeys: the vessel, on other occasions, would have excited but little attention; but no sooner did these cunning little creatures espy the stuffed specimen, than the whole community trooped off with prodigious screams

and howlings. It was of course surmised, from the excessive terror of these animals, that this was one of their most inveterate enemies.

In size, according to major Smith, this species is larger than the wild cat: the head being remarkably flat and broad, the body slender, but the legs very strong: the tail just touched the ground; and the ears were large and round. The ground colour of the neck and back was whitish grey; and the head, shoulders, throat, sides, belly, and inside of the limbs, white. The back was marked with lengthened streaks of black, edged with tawny; but those towards the shoulders and thighs were entirely of the latter colour. From the corners of the eyes to the jaws was a black streak; and on the forehead were some "barry" marks. tail semi-annulated with black; the tip black. The legs, as far as the knees, were all of a very dark grey colour. As major Smith throws some doubt upon this being the *Colocolo* of Mollini, we hope he will excuse us for not adopting that as a specific name, objectionable as it is in every way.

The Javan Cat.

Felis Javanensis, *Horsfield.* Kenank, *Javanese.*

While some of the largest feline species evince a gentleness and a docility which is not exceeded by our domestic cat, there are others, not surpassing the latter animal in the smallness of their dimensions, which seem to possess all the ferocity of the Bengal tiger. Such is the character of the Javanese wild cat, discovered by Dr. Horsfield, who informs us that it is perfectly untameable,—its natural fierceness being never subdued by confinement. It inhabits all the large forests of Java; retreating into the hollows of trees during the day, and sallying forth at night in quest of food: it visits the neighbouring villages, and commits great depredations among the poultry. The natives ascribe to it an uncommon sagacity; asserting, that in

order to approach the fowls unsuspected, and to surprise them, it imitates their voice. It feeds chiefly on fowls, birds, and small quadrupeds; but, if pressed by hunger, will devour carrion.

This species may be thus shortly described:—General colour, greyish brown; greyer on the body, neck, and limbs; deeper and more tawny towards the back, and whitish beneath. The ears are very small. Four regular series of elongated spots pass from the head to the tail; and the sides are covered with regular smaller spots. The extreme length of the body is near two feet, and the tail is about eight inches more.

The Sumatran Cat.

Felis Sumatrana, *Horsf.* Rimau bulu, *of the Malays.*

Of this species, which seems to be the wild cat of Sumatra, and peculiar to that island, a living specimen was brought home by sir Stamford Raffles. No information, however, seems to have been obtained of its native habits, neither do we know if the animal is still in existence. In its general size and proportions, as well as the shortness of the tail, it agrees with the wild cat of Java, last described; but it exhibits many peculiarities in the form and disposition of its marking, which are much better comprehended by a glance at the figure, than by the most lengthened description.

The general colour is ferruginous, inclining to yellowish grey: the spots on the body are angular, and scattered without regularity, and very different from the longitudinal and nearly parallel lines of the Javan cat; the colour of these spots is intensely brown, inclining to black.

Diard's Java Cat.

Felis Diardi, *Cuvier, Griff.* ii. 484.

A short notice of this, the third species of wild cat inhabiting the Javanese islands, will complete our list of those belonging to the Indian Archipelago. It was

first made known by M. Cuvier, who gave it the name of its discoverer, M. Diard. It is described as much larger than the two last, and very remarkable for the beautiful regularity of its spots. We know not whether it has yet been brought alive into this country.

The size equals that of the ocelot. Ground colour of the body yellowish grey: throat and back covered with black spots, disposed in longitudinal bands; while other similar spots descend down the shoulders perpendicular to the preceding: thighs, and part of the flanks, marked by black open rings, with the centres grey: legs with black full spots. The yellowish grey, and the black of the tail, form some dusky rings.

The American Beaver.

Castor fiber, *Linn.* Castor Americanus, *Cuvier.* The Beaver, *Pennant.* Ammisk, *Cree Indians.* Ttsoulayè, *Huron Indians.*

The social instinct, which impels man to seek the society and participate in the labours of his fellows, is equally manifested among several tribes of those inferior beings over which he has been placed by their common Creator. Among insects, the bee and the ant will occur to every one; and if we look to quadrupeds, in no tribe is this instinct more developed than in beavers, whose history we shall now shortly illustrate. It is a fact worth observing, that nearly all such animals as possess the social feeling to any great extent, are peculiarly remarkable for their skill and ingenuity; as if they were gifted with a higher degree of instinct, approaching to that reason which man is conscious of possessing, but which he is totally unable to define.

The beaver is as remarkable for its skill as for its docility. Some authors have doubted whether the species still found in Europe, and that so common in North America, are distinct; but M. Cuvier considers that they are really so: we shall therefore view them in this light.

The habits of the beaver are aquatic: they live on the banks of the great rivers, and wooded morasses, where

they may be said to erect villages: they prefer fixing the site of their common habitation where they can have deep water, and a current sufficiently strong to aid their efforts in conveying wood and other suitable necessaries. They seem also to be aware that, by selecting such spots, the water is never frozen to the very bottom, even in the most severe winters. Those communities, however, which are established in small creeks, or rivers, in which water is liable to be drained off, are endowed with a wonderful instinct in providing againt the evil. They erect a dam, at a convenient distance, quite across the river, and vary its construction according to the nature of the stream. If the water has little motion, the dam is nearly straight; but when the current is more rapid, it is always made with a considerable curve, and convex towards the stream, which has thus but little power to destroy the works. The materials employed are large and small pieces of wood, willow twigs, mud, and stones, all intermixed in such a way as to give an equal strength to all the parts. These dams, when not disturbed, become, in process of time, solid banks, capable of resisting a great force; and as the sprigs of willow, and other trees, which are used, generally take root and shoot up, they form a kind of regular planted hedge, which Hearne mentions as having seen so tall, that birds have laid their nests among the branches.

The beaver houses, continues Hearne, are built of the same materials as their dams; the size is proportioned to the number of inhabitants, which seldom exceeds four that are old, and six or eight young ones. A common roof contains several apartments, which have no internal communication, and are each entered by a door from the water. Hearne remarks, that the only convenience which the beaver seeks to enjoy, is a dry place to lie upon, and where it can take its food. In building their houses, the beavers lay most of the wood crosswise and nearly horizontal, taking care to leave a hollow or cavity in the middle; and when any unnecessary branches project inward, they cut them off with

their teeth. It has been erroneously supposed that the wood-work is first completed and then plastered; but this is not the case; as our traveller observes that the whole is one mass of wood, mud, and stones. The two latter materials are conveyed by these little architects in their paws, and are held close under their throat; but the wood is always dragged by the aid of their powerful teeth. All these works are executed in the night; and with so much expedition, that in the course of one night they will collect many thousands of their little handfuls. When a new habitation is to be erected, the beavers begin to fell the necessary wood early in summer; and although they commence building towards autumn, they never completely finish the roof until the cold weather has set in. Their instinct in this latter occupation is really astonishing. They add a fresh coat of mud to the roof every autumn; but they delay this operation as long as possible, as if they were perfectly conscious of the security which their work would derive from the effects of the first frost, which, by freezing the newly tempered mud, renders it as hard as a stone, and prevents their common enemy, the wolverine, from disturbing them during the approaching winter. They are frequently seen to walk over their work, as if to ascertain its stability, and sometimes to give it a flap with their tail.

Their food chiefly consists of the large roots of the yellow water-lily (*Nuphar luteum*), and the bark of trees, both which are hoarded during summer as provisions for the winter. In spring they leave their houses; and after roaming about during summer, feeding upon berries and herbage, return to their habitation a little before the fall of the leaf.

In a domesticated state, the beaver is a particularly engaging animal. Mr. Hearne mentions having kept several which learned to answer to their names, and to follow those to whom they were attached, precisely like a dog, and they were equally fond of being caressed. In cold weather, continues our traveller, "they were kept

in my own sitting-room, where they were the constant companions of the Indian women and children; and were so fond of their company, that when the Indians were absent for any considerable time, the beavers evinced great signs of uneasiness; while on their return they showed equal marks of pleasure, by fondling on them, crawling into their laps, lying on their backs, sitting erect like a squirrel, and behaving, in short, like children who see their parents but seldom." Mr. Broderip has also given an interesting account of a favourite beaver named Binny, which he had in his possession some time: we regret our space will not permit of its insertion, and it is too well written to bear abridgment.

The skins of the beaver are well known to be an important article of commerce. The destruction of these poor animals was so great in 1743, that 26,750 skins were sold by the Hudson's Bay company, and 127,000 were imported unto Rochelle. But in 1827, although the quantity sent to London was collected from an extent of country four times larger than that hunted over in 1743, the number imported did not much exceed 50,000.*

The Whistling Marmot.

Arctomys pruinosus, *Rich.* Hoary Marmot, *Pennant.* Souffleur, or Mountain Badger, *Fur Traders.*

The American marmots have recently been illustrated with much skill by Dr. Richardson †, who enumerates no less than five species; while two only are found in Europe. They all, however, seem capable of being domesticated, and well deserve a place in our menageries. The present species is about the size of a badger, has a long bushy tail, and is covered with lengthened hair of a beautiful silver-grey colour. But it is chiefly remarkable for the following habits, observed by Mr. Harmon:—It burrows on sandy soil, near grassy hills, and during autumn may be frequently seen cutting hay, to be employed or devoured

* North. Zool. i. 108. † Ibid. *i.*

ir heir burrows. While a party of them are thus occupied, they leave a sentinel, who takes his station on an eminence, and at the approach of danger utters a shrill whistle, which may be heard at a great distance: the signal is repeated from one to another along the whole line of their habitations, and thus timely security is sought. They feed on roots and herbs, and do not come abroad during winter.

The American Hare.

Lepus Americanus, *Richardson, North. Zool.* i. 217. Lepus Hudsonius, *Pallas.* Lepus Americanus, *Erxlebein.* American Hare, *Pennant.* Rabbit, *Hudson's Bay Residents.* Le Lapin, *French Canadians.*

It is interesting to trace those shades of variation in habits, by which Nature marks the distinction of one species from another, even more than by external appearance. The American hare well illustrates this truth. "It is," says Dr. Richardson, "so like the common European rabbit, that it goes by that name among all the English residents at Hudson's Bay. It seems a common animal in all the woody districts of North America; but in the barren grounds, and on the plains of the Missouri, it is replaced by other and larger species.

The habits of the American hare, notwithstanding its similitude to our rabbit, are very peculiar. It does not burrow like that animal, but resides mostly in thickets, or in woods having an underwood of willows and dwarf birch. In summer it eats grass, and in winter the bark of willows: it is likewise said to do much damage to the cabbage and turnip fields. In the Hare-Indian country, where, during winter, large animals are scarce, these hares form the chief food of the natives. Unless disturbed, it never runs about during the day, since its enemies are numerous. In high northern latitudes it becomes, during winter, of a pure white.

The mode of hunting the hare pursued by the Indians, is nothing more than destructive poaching.

They beat a circular path in the snow where the hares abound, over which these simple animals will not readily jump; snares are then set in all the hedge-gaps, after which the Indians beat about with their dogs to drive the hares into the nooses. The supper of a whole horde will often depend upon the success of this operation; since, with the usual improvidence of a hunter's life, these Indians seldom keep any store of provisions. The average weight of the American hare is only four pounds.

The Polar Hare.

Lepus glacialis, *Leach.* *Rich. North. Zool.* i. 221. Varying Hare, *Pennant.* Rekaleek, *Greenlanders.*

The beauty of this species, which appears to preserve the delicate whiteness of its fur during the greater part of the year, renders it a desirable acquisition to the parks or preserves in the northern islands of Scotland: in size, also, it is superior to the alpine or varying hare of that country, and its flesh is white and well flavoured. * Its habits are well suited also to districts which are destitute of wood; since it seems to avoid such situations, and to seek the sides of hills, where the wind prevents the snow from accumulating, and where, even in winter, it can procure berries and leaves of evergreens. It does not dig burrows, but shelters itself among large stones, or in the hollows of rocks. Although not a very shy animal, it eludes, with uncommon vigilance, the deadly aim of the hunter. Dr. Richardson gives us a singular instance of this, in the following anecdote:—"In the late boat voyage along the northern coast of America, we landed on a rocky islet off Cape Parry, which, although not above three hundred yards in diameter, was tenanted by a solitary alpine hare. The whole party went in pursuit of this poor animal; but it availed itself so skilfully of the shelter of the rocks, and retreated with so much cunning activity from stone to stone, that none of us could

* North. Zool.

obtain a shot at it, although it was never able to conceal itself from our search for more than a minute or two at a time."

The fur in winter is of a snow-white colour, and bears a strong resemblance to swansdown: it is in prime order (in latitude 65°) about the end of October; and begins to be replaced in the following April by the summer coat, which is more or less coloured. In higher latitudes, however, this change does not take place, since Otho Fabricius informs us that in Greenland its colour is at all times white.

The American Woodland Reindeer.

Cervus (Tarandus) sylvestris, *Richardson.* Caribou, *American Voyagers.* Attehk, *Cree Indians.* Tantseeah, *Copper Indians.*

It has been customary, not only with compilers of Natural Histories, but even with professed zoologists, who should know better, to mix together all the information they can find, narrated by travellers, regarding the reindeer of the two continents, and to blend the whole in one narrative, taking for granted the accuracy of a point, which has never been proved, or even properly investigated, that the reindeer of America and of Europe are of the same species. This plan we shall not adopt. It has been well observed by Dr. Richardson *, that neither of the two "permanent varieties" of the American reindeer have as yet been properly compared with the European or Asiatic races; and the distinguishing characters, if any exist, are still unknown. With the remarkable fact before us, that it is only within the last six years (1830) the elk of Sweden has been discovered to be distinct from the elk of America, we may reasonably doubt if similar differences do not exist in other species of animals, hitherto supposed to inhabit both continents in common. The history of the European reindeer has been frequently given, and is to be found in the narratives of so many travellers, that we shall not here repeat what is so gene-

* North. Zool. i. 238.

rally known. But the manners of the American races have only been furnished to us by Dr. Richardson. His observations, therefore, possess both novelty and value, as being the result of a long residence, and of attentive observation made, in the native regions of these interesting animals.

The large size of the woodland reindeer, or Caribou of the American voyagers, distinguishes it, at first sight, from that race or variety which lives in the plains. Although so much superior in size, its horns are much smaller; and even when in good condition, its flesh is vastly inferior. Its geographic range, as observed by Dr. Richardson, is confined to a stripe of low, primitive, woody rocks, about 100 miles wide, and nearly as many broad, between the shores of Hudson's Bay and Lake Superior. Contrary to the other race, they traverse to the southward in spring. These migrations are performed in herds of such immense numbers, that they will sometimes occupy several hours in crossing the river near York Factory, in a crowded phalanx: this takes place in May; they pass the summer on the marshy shores of James Bay, and return northward in September. Their numbers, on these occasions, may be judged of, when Mr. Hutchins asserts that he had seen eighty head of deer brought in one day to York Factory, and many others were refused for want of salt to preserve the flesh: the natives, in fact, continued to destroy the poor animals merely for the sake of their skins. The same writer says that the fawns, when taken young, soon become as tame as pet lambs.

A peculiarity in the anatomical structure of the buck, noticed by Mr. Hutchins, deserves investigation; it is a peculiar bag, or cyst, in the lower part of the neck, about the size of a crown piece, filled with fine flaxen hair, neatly coiled round to the thickness of an inch; it then communicates to an opening through the skin placed near the head. Dr. Richardson remarks upon this fact, that Camper found a membranaceous cyst in the European reindeer, above the thyroid cartilage, and

opening into the larynx: but I have met with no account of a cyst with a duct opening externally, like that described by Mr. Hutchins; and, unfortunately, Dr. R. was not aware of the alleged fact until his return to England. If future investigation establishes the fact of a different formation in these parts in the European and the American reindeer, their distinction as species will, in our opinion, be established beyond all controversy.

The Barren Ground Reindeer.

Cervus (Tarandus) arctica, *Richardson*. Common Deer, *Hearne*. Took-too, *Esquimaux*. Tukta, *Greenlanders*.

This is the second race of reindeer found in the arctic regions of America, first distinctly made known by Dr. Richardson, who says it is so small, and weighs so little, "that I have seen a Canadian voyager throw a full-grown doe over his shoulders, and carry it as an English butcher would a sheep." Neither this nor the woodland race have ever been domesticated; while the European reindeer is well known to be the most domestic animal of our northern nations. The habits and the locality of this small animal are very different from those of the woodland species last described: it only retires to the woods in winter; and passes the summer on the coasts of the Arctic Sea, and on the barren grounds, where it feeds upon various lichens. In May the females proceed towards the sea coast, and are followed by the males during the next month: the sun having then dried up the lichens on the barren grounds, the deer frequent the moist valleys of the arctic coast, and pasture on the withered grass or hay of the preceding year: this spring journey is performed partly on the snow, and partly, after that has disappeared, on the ice. In September they commence their return to the south, and they reach the woods during the next month. During this journey, which is performed after the snows have fallen, a bountiful Providence provides them with

a peculiar food, and endows them with the instinct to discover it. The lichens at this season are, as Dr. Richardson observes, uncommonly tender and pulpy, being preserved moist and unfrozen by the heat still remaining in the earth: the deer seem to be aware of this, and propelled by instinct to such spots as are congenial to the growth of their favourite food; but where it is entirely concealed, they procure a certain supply of it by scraping away the snow with their feet.

The exquisite adaptation of the fur of the reindeer to resist cold, has been the general subject of admiration with all travellers. Dr. Richardson says, that from the closeness of the hair, and the lightness of the skin, it is the most appropriate clothing that can be used in the arctic latitudes. It is, in short, so impervious to cold, that, with the addition of a blanket of the same material, any one so clothed may bivouac on the snow with safety, in the most intense cold of an arctic winter's night. Sir A. Brooke observes, "that the hairs composing their coat are indeed so thick, that it is hardly possible, by separating them in any way, to discern the least portion of their naked hide."

The colour of this reindeer, in its summer dress, is of a clove brown, mingled with deep reddish and yellowish browns; the under surface of the neck, the limbs, and the belly being white: the hoofs are very large, and greatly spread; and the posterior ones make a loud clattering noise when the animal runs. In regard to the characters which some naturalists have attempted to draw, from the configuration of the horns, of the American and European races, the remarks of Dr. Richardson impress us with a belief that they are altogether futile: this opinion, in fact, had been expressed by baron Cuvier, who seems to think that the only character common to all he has examined (including, as we presume, both the American and the European races), is the smoothness and compression of the horns in every part, except in the very small portion connected to the burr.

On the introduction of the reindeer in the Highlands of Scotland, the following judicious observations have been made by Mr. Bennett*:—"Several attempts have been made of late years, all which, if we mistake not, have failed; since one of the most striking peculiarities in their habits appears to have been lost sight of: we allude to their migratory disposition, for which no allowance has been made: those which have been introduced, appear to have been turned out into a park or inclosed ground, in which their natural food, the lichen, was supposed to be sufficiently abundant, and there left to take their chance." We believe, that, of all the attempts to acclimate the reindeer, none has been more successful than that made at the gardens of the Society, where a single female, of the white variety (European or American?), has lived through two winters, without suffering any apparent inconvenience; her food has been uniformly dry provender."

The Wapiti Elk.

Cervus Strongyloceros, *Rich. North. Zool.* i. 251.

Many of our readers may probably recollect the exhibition, at the Egptian Hall, of several of these stately looking animals, several years ago, where they excited universal curiosity in the town, from the enormous size of their antlers. They were brought from the plains of the Missouri, and were finally turned out into some of the royal private parks, where it is said they have propagated, although great care is required for their preservation. They live, in their native state, in small families of six or seven individuals. They would seem to fight with great fury; since two males were found, near Edmonton House, lying dead, with their horns locked into each other: it is said, also, that the moose and rein deer are occasionally found dead under similar circumstances. The horns acquire an immense size; and major Smith observes, that at one

* Zool. Gard. ix. 251.

period they expand with such rapidity, that their growth exceeds an inch and a half per day. In an individual he alludes to, the horns, of six antlers each, measured three feet long; another, five feet; and one mentioned by M. Cuvier, even exceeded six feet. Authors seem to be of opinion that the Canadian stag (*C. Canadensis*) is a small variety of the wapiti; but we by no means consider that this fact is established, notwithstanding the comparisons made of their horns by baron Cuvier. In the size, and in the locality of the two animals, there is an essential difference: the Canadian stag is always smaller, and lives in deep forests and rocky mountains; while the wapiti is admitted by major Smith to be "heavier in body, his legs shorter, his horns longer and slenderer, and he lives in the savannahs and plains of the interior."* All the true wapitis seen by major Smith, had the tail very short; but some writers, who mention the Canadian stag and the wapiti as one, say that the tail varies from two to four inches: this difference will probably be found hereafter to be specific.

The American Moose Deer.

Cervus (Alces), *North. Zool.* i. 232. *Americans.*

Dr. Richardson and major Smith appear to be the only naturalists who have expressed a suspicion that the American moose was a different animal to the European elk. The imperfect state, however, of our national museums, rendered it impossible for these naturalists to ascertain the fact by any difference of outward structure, since no preserved specimens of the two kinds could be consulted. It has therefore been left, as is usually the case, for a foreigner to establish the distinction. We had the pleasure of seeing this gentleman, when he came to the British Museum, in the hopes of satisfying his inquiries; but, alas! no elk, either European or American, was to be seen. We remember he pointed out the distinctions of the two with great judgment and skill;

* Griff. Cuv. iv. 497.

and we have since heard, that, by prosecuting his researches at the French Museum, he has favoured the scientific world with the result of his observations. How long are our public sources of zoological study thus to excite the surprise, if not the contempt, of foreigners? When the officers of the British Museum are labouring to impress this truth upon the higher powers, and when they possess every requisite in zeal and devotion to their duties, it is really a national reproach that their representations are not sufficiently attended to.

Living specimens of this noble animal have been occasionally brought to England, and one was sent to George the Third from Hudson's Bay. Its manners present many peculiarities, differing from those of the other American deer. In general, it is a solitary animal, and hence is endowed with a most exquisite sense of hearing; it is, in short, the most shy and wary of all its congeners, so that moose hunting is the greatest accomplishment of an Indian. From the length of its legs, and the shortness of its neck, the moose cannot graze, like other animals, upon level ground; it therefore browses on the tops of plants and the leaves of trees in summer, and on those of willows and birch in winter: these the animal often crops as if they had been cut by a gardener's shears.

The moose, when not provoked, is an inoffensive animal. "The young ones, in particular," says Hearne, "are so simple, that I have seen an Indian paddle his canoe to one in the water, and take it by the poll, without any opposition; the poor harmless animal seeming as contented as if swimming by the side of its dam, looking up in our faces with the same fearless innocence as a house lamb would, making use of its fore feet every instant to clear its eyes of mosquitoes." The moose is the largest of the deer kind, being higher at the shoulders than the horse; and it is, of all others, the most easy to tame and domesticate.

The Axis Deer.

Cervus Axis, *Auct.* Axis, *Pliny, Buffon.* Parrah, *Hindostan.*

The elegant spotted markings of the Axis deer, spread over all parts of the body, will immediately enable an observer to distinguish it from the fallow deer. It belongs to a particular race of this family, chiefly found in India; and the present, which is the best known example of the group, is common in the plains and jungles of India and the neighbouring islands. They have long been great favourites in European menageries, where they breed; and, in favourable situations, are said to propagate freely in open parks. Timid and gentle in their natural disposition, they are said to be particularly mild and quiet in captivity. Authors attribute to this, and to several other kinds of deer, such an extreme sensibility both of taste and smell, that, although fond of bread, they will not touch it if it has previously been blown upon. The Axis very closely resembles the fallow deer in size, form, and even in colour; but the buttocks of this is destitute of the broad white patch which nearly covers that part in the fallow deer.

The Black-tailed Deer.

Cervus Macrotis, *Say.* Great-eared Deer, *H. Smith.* Cerf mulet, *Desmarest.* Jumping Deer, *Hudson's Bay Residents.*

We owe the first indication of this species,—peculiar, as it would seem, to the plains of the Missouri and the Columbia,—to the exploratory expedition of Lewis and Clarke. Dr. Richardson could not obtain any specimens, but fortunately met with one preserved in England, from which Mr. Landseer has made an admirable figure. Inhabiting a climate congenial to our own, the present seems an animal well worthy of general introduction. Its manners, in one respect, are peculiar; when roused, it makes off by uninterrupted bounds, raising all its feet from the ground at once, and vibrating its black-tipt tail from side to side. From living on the eastern

side of the Rocky Mountains, in the great Buffalo districts, where there are abundance of large moose and wapiti, this species has hitherto attracted little attention either from the hunters or residents. Its length is about two feet and a half.

The Prong-horned Antelope.

Dicranocerus furcifer, *Smith.* Antilope Americana, *Ord.* Antilope palmata, *Desmarest.*

The prong-horned antelope is another of those deer, which, inhabiting the colder regions of North America, appear well fitted to give interest and variety to the parks of our nobility. Its form, as described by Dr. Richardson, is particularly graceful, — having a slender head, large eyes, and long, delicate limbs. It stands about three feet from the ground, and the fur is of a clear yellowish brown, darkest on the back. It is either solitary, or lives in small herds; and appears to be common on the open plains and low hills at the foot of the Rocky Mountains, in lat. 53° N., which is its most northern range.

The mode of hunting this animal by the Indians is curious, and is thus alluded to by Dr. Richardson :— "The Indian hunters have no difficulty in bringing an antelope within gunshot, by various stratagems, such as lying down on their backs and kicking their heels in the air, holding up a white rag, or clothing themselves in a white shirt, and showing themselves only at intervals. By these and similar manœuvres, the curiosity of the herd is so much roused, that they wheel round the object of their attention, and at length come within reach of the hunter's shot: this disposition, in the present species, is remarkably strong.*

* North. Zool. i. 163.

The European Roebuck.

Capreolus Europæus, *Smith.* Cervus Capreolus, *Linn.* Chevreuil, *Buffon.* Roebuck, *Pennant.* Rehe, Redbock, *German.* Kosa, Dikaja, *Russian.* Ibec, *Tartars.*

The roebucks generally, according to the views of major Smith, form a little group in the family of deer, exclusively belonging to the Old World, where they represent the Mazama deer of North America, and the brockets (*Subulo*) of Brazil and Paraguay. The common roe is the smallest of European deer, being about four feet long, and not standing higher than two feet eight inches at the shoulders. There appears to be three varieties; one very red. another yellowish brown grey, and a third nearly black: all these, however, have a white disk upon the buttocks, at the root of the tail; but this disappears in their summer dress. Roebucks are found over the greatest part of Europe, and the North of Asia; they are not uncommon in Scotland, but are scarcer in England. It is an extremely graceful, active, and beautiful animal: its eye is full of fire, and its limbs are remarkably pliant: it loves elevated spots on the borders of woods, and leaps with great vigour. As it leaves a strong scent, advantageous to the hunter, it is endowed with peculiar sagacity to baffle the dogs. It begins, after a first dash forward, to double over its track, and mislead the hounds; then breaks the scent by taking some prodigious bounds; and springing off towards a cover, lies down, and lets the chase pass. The black variety is confined to the duchy of Luneburg in Hanover.

PART II.

ON LIVING OR DOMESTICATED BIRDS, SUITABLE FOR AVIARIES OR PRESERVES.

In determining the plan most advisable to be pursued in this division of our volume, much difficulty has been experienced. Our first idea was to have drawn up as complete a catalogue as possible of all such foreign birds as were to be met with in our public or private menageries, distinguishing such as were known to have bred in confinement, and had consequently become domesticated, from such as were merely acclimated, or accustomed to our climate. This, without doubt, would have been the most desirable plan of proceeding, and would have given that information to the lovers of aviaries, which is now so much wanted; but further inquiry showed us the utter impossibility of doing this, from the total absence of the necessary materials. It has not been heretofore the custom of recording, in print, information of this nature. Those persons whose trade lies in the buying and selling of living birds, and of which there are several in London, are not persons capable of writing upon such matters, even had they the inclination to reveal what they no doubt consider the secrets of their craft. The Zoological Society, on the other hand, by embracing within its objects the whole animal kingdom, has hitherto found itself so occupied, and its attentions so distracted by the multiplicity of its concerns, and the paucity of its working members, that nothing worth mentioning has been communicated to the public on this interesting subject. However desirable, therefore, such an exposition as we at first contemplated would be, it never can be carried into execution, unless

by the powerful and united assistance of those who direct their time and attention almost exclusively to the rearing and management of birds.

The second plan that suggested itself, was to write a popular account of those birds only which were usually seen in menageries, and which, with few exceptions, would comprise the most remarkable in the feathered creation: but this is the sort of selection commonly made in all popular histories of birds, whether large or small, and would have been somewhat unsuited to the nature of these Treatises. The histories of such birds as the ostrich, eagle, vulture, nightingale, &c. &c. are now so well known, that, through the pages of the "Penny Magazines," they are already in the hands of half the artisans in the kingdom; and the subject has been so exhausted, that the ablest pen could only repeat, under a different form of words, the same anecdotes and the same facts that the public are now pretty well tired of hearing. The biography of birds, no less than of quadrupeds, is a distinct branch of Natural History. A writer in this department can only give original information, when he treats of subjects which he has seen in a state of nature: he has nothing to do with science, properly so called; his business lies only with facts, and these he is to go out in the fields and gather as best he can. Now, in regard to the native birds, this is a matter of no great difficulty, as the materials for original remarks are all before him. With him, indeed, Natural History is a pursuit of observation, and nothing else. But if he wishes to extend his sphere, and to describe the manners of birds he has never seen, from that moment he must virtually become nothing more than a compiler: his subject is one which not only precludes, but absolutely forbids, all deviation from the materials he may gather from others; he has to pin his faith on the statements that have been already made, and merely become an arranger and narrator of other men's sayings. Compilations, therefore, on the natural histories of birds, and, indeed, of animals generally, are innumerable,

and require not to be increased by a volume, upon this plan, in the CABINET OF NATURAL HISTORY.

Seeing, therefore, that of the two plans already mentioned, one was impracticable, and the other uncalled for, a third suggested itself as not only useful, but, in some respects, original. Without altogether rejecting the introduction of those species usually seen in menageries, — an omission which would belie the title of our volume, — we have been guided in the rest of our selection by introducing such birds as are adapted both for small and large collections; giving the preference to those species that can be kept in compartments of the pleasure grounds, or in inclosed canals, ponds, or other fresh waters. This part of our volume will, therefore, not be so much a guide to the visiters of aviaries as to those who desire to be themselves the possessors of one, however small. There are few private gentlemen in this kingdom, living in the country, or on their own estates, who do not possess a fenced inclosure, a poultry-yard, or a pond, — one or all of which, with very little trouble, will be sufficient to contain a few of these birds, the number and variety of which may be regulated according to circumstances, and may be increased, as capabilities exist for their accommodation, to any extent. We think that this mode of ornamenting our grounds, and of exciting an additional interest both to their proprietors and their visiters, has been very much neglected. To us, indeed, the sight of a bird in a confined cage, however we may admire it, always excites an unpleasant feeling of captivity, which does not force itself on the mind if the same bird is seen within a large inclosure it. the open air, or swimming at ease in its native elemenn We have not, however, in the following selection, merely brought before the reader a portion of such birds as have been already introduced into this country; but many others are noticed, which, from the nature of their food or habits, joined to their beauty or variety, seem equally calculated to bear our climate. Among these are several which we merely know from the de-

scriptions given of them in systematic works: but as their native countries are pointed out, an opportunity may thus be given to such of our countrymen as are residing abroad, to procure them: at all events, they will know what birds will be most esteemed in this country, of such as are here described, and whether they are worth the trouble and expense of sending them alive from any great distance.

The aquatic birds of the rasorial division (which includes the whole of the swans, geese, and ducks) have more especially claimed our attention; and this, for several reasons. In the first place, a very large proportion are of species which will freely live upon ponds, and such other small pieces of water as are always to be met with in the country, and are therefore more adapted as ornaments to the residences of private gentlemen. To these birds, also, there is generally some little history attached, beyond a mere description of their plumage, elucidating the economy of the species themselves in a state of nature, and guiding the amateur in many things connected with their proper management. Secondly, the majority of these birds are so hardy as to need no other care than shelter during frost,—a protection which can generally be given them in the outbuildings of a gentleman's establishment, where a common stove would keep the air sufficiently warm to prevent injury to the birds. Thirdly, the aquatic and the rasorial orders are those only, with very few exceptions, which breed in confinement; and this faculty opens a fresh source of interest and delight to their possessor—enabling him not only to increase his own stock, but to exchange or distribute the eggs and young among his friends and neighbours. We grant, that the numerous species of cage birds, particularly of the family of parrots, are more brilliant in their plumage, and may, among our female amateurs, receive the preference; but these birds, generally sold at high prices, have nothing but their simple beauty to recommend them: they do not increase and multiply under our eyes: we know nothing of their history, but their name

and the country they inhabit; and had they been more prominently noticed in this selection, our descriptions would have assumed all the technicality of a scientific treatise, instead of detached pieces of ornithological biography. To those, however, who desire a short compendium upon the parrots alone, the interesting volume by Mr. Selby*, on this family, is the best they can procure.

Nearly the whole of the rasorial birds are well known to be eminently capable of domestication; and we should feel regret at our limits not allowing us to treat of them in more detail, but that a small volume upon this order† has already appeared, which will in a great measure supply the deficiencies of this: it will also put the reader in possession of a number of coloured figures of the principal species, which could not be here introduced under any circumstances. With the exception of some few groups, such as the true grouse, the sand grouse, the bustards, and a very few others of minor note, the whole of the *Rasores* may be considered as adapted to our menageries; while those which, in their own circles, are also rasorial types, live and propagate almost as well as in a state of nature. To have introduced all these, however, into our present list, (such as the genus *Phasianus, Numida, Gallus,* &c.) would have been quite impossible, seeing that they would almost fill an entire volume.

According to a list just published by the Zoological Society, as a guide to their menagerie, the following species appear now to be in their possession in a living state: —

Phasianus colchicus *Linn.*	Common Pheasant.
torquatus *Tem.*	Chinese ring-necked ditto.
Nycthemerus pictus *Sw.*	Gold Pheasant.
argentatus *Sw.*	Silver ditto.
Phasianus Reevesii *Hardw.*	Reeves's ditto.
pectoralis	Purple-breasted ditto.
Ceriornis Temminckii *Sw.*	Temminck's Satyr.

* Naturalist's Library, vol. xv. † Ibid. vol. v.

Gallus Sonneratii *Tem.*	Sonnerat's Jungle Fowl.
Pavo Javensis	Javanese Peacock.
Numida meleagris.	Common Guinea Fowl.
Colomba Œnas *Linn.*	Stock Dove.
palumbus *Linn.*	Woodpigeon.
[*No systematic Names affixed.*]	Aureted or Mountain Doves.
	Zenaida ditto.
	Barred Turtle.
	Scolloped-necked ditto.
	Triangular-spot Pigeons.
	Necklace Pigeon.
	Russet Pigeons.
Peristera chalcoptera *Sw.*	Bronze-winged Pigeons.
Columba mystacea *Tem.*	Moustached ditto.
cruenta *Lath.*	Red-breasted Pigeon.
risoria *Linn.*	Collared Turtle Doves.
turtur *Linn.*	Common Turtle.
Corensis *Gm.*	Cora Dove.
leucocephala *Linn.*	White-crowned Pigeon.
Nicobarica *Linn.*	Nicobar Pigeons.
Ectopistes migratoria *Sw.*	Passenger Pigeon.
Ortyx Virginianus *Steph.*	Virginian Quail.
Coturnix Chinensis *Cuv.*	Chinese Quail.
Crax alector *Linn.*	Crested Curassow.
globifera *Linn.*	Globose Curassow.
Yarrellii *Benn.*	Yarrell's ditto.
rubra *Linn.*	Red ditto.
Ourax erythrorynchus *Sw.*	Razor-bellied ditto.
Lophocerus galeata *Sw.*	Galeated ditto.
Dromiceus Australis *Sw*	Emu.
Struthio Camelus *Linn.*	Ostrich.
Casuarius galeatus	Cassowary.
Rhea Americana *Vieil.*	Rhea.

Considering the vast number of rasorial birds which, there is every reason to believe, might live healthily and freely in our aviaries, the above appears to us a very scanty list, not at all commensurate to what the Society might possess, had their plans not embraced such a diversity of objects; and yet this collection of the *Rasores* is probably equal to any at present existing in this country.*

The experience of every day, indeed, shows the in-

* The collection of living birds in the possession of the earl of Derby is said to be very large; but I know nothing of it beyond this report.

calculable advantages of a division of labour, in the most comprehensive sense of the principle. Before the institution of the Zoological Society, we question whether such an assemblage of rasorial birds existed in this kingdom; but now that we have another society, restricting itself alone to this branch of zoology, it is natural to suppose that, in a short time, we may find that the number of the *Rasores* alive in their collection will be doubled, or perhaps trebled, to those we now possess.

From what we have seen of the manner of keeping the rasorial and the cage birds in the two Zoological Gardens of the metropolis, it appears to us that both are open to much improvement. The paramount object should be, as we conceive, to give them as great an appearance of being in a natural habitation as the circumstances of their confinement will possibly admit, and to preserve all the exotic species securely sheltered from those sudden changes in the atmosphere which are, unfortunately, the great characteristic of this country. The misery which these poor little birds exhibit in themselves, with their feathers ruffled, and their heads drawn up between their shoulders, in the spring and autumn, when exposed in open cages, is really melancholy to witness; and takes away more than half the pleasure the spectator would otherwise feel: instead of life, activity, and animation, we plainly see misery and wretchedness exhibited in the deportment of all but our native hardy birds, which nobody cares to look at, because they may be seen every where. The only way to remedy this, is to have the whole collection of exotic birds under glass, on the same principle as the admirable and elegant building erected by Mr. Cross at the Surrey Gardens for his quadrupeds, and which, being properly ventilated, might easily be kept, during the colder months, at a fixed temperature. In lieu, also, of the formal straight perches, and gravelled bottoms to the separate cages, shrubs of different kinds might be introduced, either permanently or in pots, capable of being

occasionally removed when they had grown too large, upon which the birds might sport about as in a state of liberty: the gravelled bottoms of the cages, also, are very objectionable. In the first place, they are often very injurious to the feet of many birds, who, in a state of nature, are accustomed to run upon the green sward, but who are now compelled to walk upon what is, to them, pointed and sharpened flints: there are numbers of our native creeping plants which would grow at the bottoms of their cages in any soil, and thus always cover them with a carpet of green, pleasing to the eye of the spectator, and doubly pleasing to the poor birds, who would thus run or walk with pleasure to themselves, and with more life and agility. Such species, again, as show the least disposition to breed, (and many, we have no doubt, would do this, if their habitations were constructed on the principle we are now advocating,) should be more particularly supplied by natural shelter; that is, the shelter of leaves and branches: dwarf trees or shrubs, having dense foliage, should be put in their inclosures, within which the nests may be constructed among the branches, and the females screened from observation. The parrots, nearly all of which build in hollow trees, might have such retreats provided for incubation. The present mode of putting boxes and pigeon-holes into all aviaries, without regard to the different nature of the birds, is but a rude and inadequate substitute for more appropriate contrivances. In short, we consider that the art of preserving and rearing foreign birds in this country, is quite in its infancy; and our only surprise is, that, with the inadequate means that are employed, any species are kept alive more than a few months after their being consigned to such comfortless habitations. We remember to have seen, not long ago, in the Zoological Gardens, early in the spring, when the cutting north winds made us glad of a great coat, the Senegal turacco (*Corythaix Senegalensis*) drooping in the same open cage as contained a collection of English finches, and

other of the commonest and most hardy birds: now the *Corythaix*, in its natural state, is well known to inhabit the hottest parts of Africa, and is so litttle adapted to this climate, that it has never been known to breed; it consequently requires perpetual warmth, even for the comfortable enjoyment of existence. Can it be wondered at, therefore, that so much mortality takes place in the Society's collection? and not only in theirs, but in all others? It may, indeed, be urged, that establishments like those of the Surrey Gardens and the Regent's Park are so much occupied in attending to the general interests of their concerns, that they have neither the time, the funds, nor the assistance to render any one department more efficient than it now is; more especially as, in addition to the immense and complicated concerns of their gardens, the Zoological Society's museum is now of such magnitude, as almost to require a separate Society to conduct its management, and render it of that effectual service to science, which, under adequate management and an enlarged establishment, it is so well calculated to prove.

In the following pages we have noticed several of those rasorial birds belonging to the genus *Crax*, which, from their affinity to the domestic fowl, might be successfully introduced into our aviaries, or kept in separate inclosures of the poultry-yard. It does not appear that the Society has yet succeeded in breeding these birds, although their management is so well understood in Holland, that they have been reared there with the same ease as common poultry. So much confusion, however, seems to exist among the species of these birds, as they now stand, that, in pointing out such as are likely to succeed in Britain, we have thought it best to adhere to the nomenclature and descriptions of M. Temminck, in whose admirable volumes the reader will find much more respecting them, than we can afford space for in this. The native fowls, with those two most elegant Oriental pheasants, *Nycthemerus pictus* and *Nyc. argentatus*

(the gold and the silver), together with the different species of curassow birds, are those most likely to breed, and perpetuate their kinds, under the management of those who will sedulously persevere in using "all appliances and means to boot" to effect such an object: when once these means are discovered, all the real difficulty ceases; and with the fact upon record, that a Dutch amateur could desire his cook to kill a curassow bird, with the same ease as if he ordered a turkey or a fowl, we need not despair of being able eventually to do the same thing in England.

Let us now turn to the aquatic birds, or rather to those which are of the rasorial division of that order; and these are all comprised in the family of the *Anatidæ*, or ducks, collectively so called. Most of those we have included in our selection are much more hardy than the generality of the foreign gallinaceous birds, requiring less care in every way, and are therefore more adapted for private collections; this is one of the reasons that have induced us to give them so prominent a place in our list. Some of these may be kept by any person, from the gentleman farmer who has a duck-pond in his fields, to the wealthy owner of a country seat, whose grounds are watered by a river or artificial canal. To these might be added other well known aquatic fowls, not particularly described in this work; such as the water-hen, coot, dab-chick, &c.; which, if once located, and kept perfectly undisturbed by dogs, &c., would soon increase without further care, trouble, or expense. For the other hardy species, food and shelter during the depth of winter seems to be all that is necessary; while, if the sides of the pond are inclosed by a properly constructed iron fence, little danger might be apprehended either from dogs or other enemies.

It appears from the *Guide to the Zoological Society's Gardens,"* published under their authority, that the following species are now (August, 1837) living in their menageries: —

SWANS.

Cygnus olor *Briss.*	Tame Swan.
ferus *Briss.*	Wild Swan.
atratus *Meyer.*	Black Swan.

GEESE.

Cereopsis Australis *Sw.*	Pigeon Goose.
Anser leucopsis *Bechst.*	Brent Goose.
bernicla	Barnacle Goose.
Canadensis	Canada ditto.
cygnoides	Chinese ditto.
Gambiensis *Ray.*	Spur-winged ditto.
Sandvicensis *Vig.*	Sandwich Island ditto.
Egyptiacus *Briss.*	Egyptian ditto.
Dendrocygnus erythrorynchus *Sw.*	Red-billed Tree Duck.

FRESHWATER DUCKS. *Anatinæ.*

Dendronessa sponsa *Sw.*	American Summer Duck.
galericulata *Sw.*	Mandarin Duck.
Boschas domestica *Lin.*	Common Wild Duck.
formosa *Sw.*	Beautiful Teal.
crecca *Sw.*	Common Teal.
Anas clypeata *Linn.*	Common Shoveller.
Dafila acuta *Leach.*	Pintail.
Chauliodus Strepera *Sw.*	Gadwall.

SEA DUCKS. *Fuligulinæ.*

Clangula vulgaris *Leach.*	Common, or Golden-eye Garrot.
Fuligula cristata *Leach.*	Tufted Duck.

Considering that the aquatic species necessarily form but a portion of the general collection, and that the attention of the Society is not directed to any one particular family of birds, but is spread over the whole, the foregoing list may be considered a fair proportionate amount of species; and yet, when we view it in reference to the number of the *Anatidæ* that are known to bear confinement, or whose habits give every reason to believe that they are fitted for partial domestication,

the collection is a very small one. In the *General History of Birds*, Dr. Latham enumerates no less than 145 species of this family; and although he makes no distinction between the freshwater ducks and those which more peculiarly inhabit the sea, yet the average number of the latter cannot be taken at more than one third; seeing that in the other two thirds we should include not only the ducks, but the swans and geese. Hence it results, that there are probably little short of 100 species of this family which may be supposed capable of being acclimated, or domesticated, if the especial attention of any influential Society were directed more to this family than to any other. But to do this effectually, much more time, trouble, and expense must be devoted to them, than has hitherto been the custom,—at least in the aviaries of this country. Many of the most beautiful species, from being peculiar to warm climates, must be sheltered, and kept in an artificial temperature, nearly one half of the year, and the greater part enjoy the same comfort during the winter. To accomplish this, there appears no other effectual means than inclosing them in large glass preserves, something similar to that at the Surrey Zoological Gardens; one being devoted to the tropical *Anatidæ*, or those of a more tender constitution; the other to such as merely require protection from frost. The expense of such buildings, it may be urged, would be very great: but then it should be remembered, that, when once erected, they would endure for years; they would be permanent residences, and insure a success in the preservation and rearing of living birds we know not how to accomplish by any other means.

The recent establishment of the Ornithological Society of London, whose objects are entirely limited to the feathered creation, and more especially to the rasorial order and its representatives, promises to realise all that we have said on this interesting subject. The peculiar privilege possessed by this Society, of using the noble canals in the royal parks as their aquatic preserves, gives

them advantages in this respect, which no other Society can enjoy without an expense that would be altogether chimerical. These wide expanses of water, although situated almost close to the densely peopled quarters of the metropolis, are yet of such extent, that, by their sides being judiciously planted with aquatic plants and shrubs, they are sufficient to contain hundreds of aquatic birds, who might securely breed in the shelter of its banks when sufficiently clothed with plants; while from these preserves, in a few years, the eggs and young of the most domesticated sorts might be distributed and dispersed to those of the nobility and gentry throughout the kingdom. The same results, although in a less degree, may reasonably be expected from their intention of cultivating and propagating the true rasorial birds. The rapid increase of this Society, indeed, is very remarkable. Twelve months have scarcely elapsed since it merely consisted of a few public-spirited individuals, who justly conceived, that to bring under the eye of the multitude an "untaxed" display of animated nature, would contribute to soften and humanise the lower orders, and to interest the intelligent. Nor has this expectation been disappointed: their motives have been appreciated, and their exertions seconded so promptly, that in these few months the Society now numbers near 200 members, including all the most eminent ornithologists; while it is patronised by the highest ranks in the kingdom. Thus encouraged, their plans have been enlarged; and as their funds increase, they propose forming a museum of preserved birds and a library of ornithological works. It is with great pleasure that we can state, that in these most desirable intentions they have received the support of the Zoological Society; from whose extensive museum, already overburthened with duplicates, a liberal donation of specimens, as it is understood, will be presented. We cannot sufficiently extol such liberal feeling, and such a course of sound policy as regards the advancement of science; an advancement which can never be

so much accelerated as by this division of labour. It is chiefly, however, to its foreign correspondents and active well-wishers that the Society must look for the acquisition of those species which are not indigenous; and for those, also, which have not been yet imported alive into this country; for the amount of the annual subscription is so small, that the funds of the Society will not admit of expensive purchases from the ordinary dealers in birds; and a considerable outlay must be made in the erection of suitable aviaries, &c., which are absolutely necessary for ulterior success. We trust, therefore, that our countrymen in all parts of the colonies, as well as those who are residing in foreign climates, will second the objects of the Society, by donations of those domesticated or other birds, which can be procured in the countries where they are now residing.*

The White-headed Eagle.

Aquila leucocephalus, *Auct.* (*Fig.* 22.)

This majestic bird is chiefly confined to the colder latitudes of the New World, where it seems to represent the golden eagle; its appearance in the North of Europe is rare, and probably accidental. Like others of its tribe, the plumage, in youth and in mature age, is essentially different. Until the third year, the general colour is uniform brown; it then begins to show a few white feathers on the head; and finally, by the end of the fourth year, the whole head, neck, and tail becomes pure white. Eminently distinguished by all the strength, the courage, and the tyranny of his congeners; and accustomed, in his native wilds, to soar in mid air, plunge into the falling cataract, and give chase to others less

* Communications may be addressed to Harry Chester, Esq., Hon. Secretary, at the Society's Rooms, Pall Mall, London.



powerful than himself; the white-headed eagle must not be judged of as he appears in captivity, mewed up in the narrow confines of a cell. Let us, then, turn to the delightful volumes of the *American Ornithology* for his true character.

"This distinguished bird," says Wilson, "as he is the most beautiful of his tribe, and the adopted emblem of our country, is entitled to particular notice. Formed by nature for braving the severest cold; feeding equally on the produce of the sea and of the land; possessing powers of flight capable of outstripping even the tempests; unawed by any thing but man; and, from the etherial heights to which he soars, looking abroad, at one glance, on an immeasurable expanse of forests, fields, lakes, and ocean, deep below him; he appears indifferent to the little vicissitudes of change of season, as, in a few minutes, he can pass from summer to winter, from the lowest to the highest regions of the atmosphere: he is, therefore, found at all seasons in the countries he inhabits; but prefers the shores of sea coasts, and the larger rivers and lakes, from the great partiality he has for fish. In procuring these, he displays, in a singular manner, the genius and energy of his character; which is fierce, contemplative, daring, and tyrannical, — attributes not exerted but on particular occasions, but, when put forth, overpowering all opposition. Elevated on the high dead limb of some gigantic tree, he seems calmly to contemplate the motions of the various feathered tribes below, pursuing their busy avocations;—the snow-white gulls winnowing the air—the busy *Tringa* coursing along the sands — trains of ducks, streaming over the sur-

face—silent and watchful cranes, intent and wading—clamorous crows, and all the winged multitudes that subsist by the bounty of this vast liquid magazine of nature. High over all these, hovers one whose action instantly arrests his attention. By his wide curvature of wing, and sudden suspension in the air, he knows him to be the fish-hawk, settling over some devoted victim of the deep. His eye kindles at the sight, and, balancing himself with half-opened wings on the branch, he watches the result. Down, rapid as an arrow from heaven, descends the object of his attention; the roar of its wings reaching the ear as it disappears in the deep, making the surges foam around! At this moment, the eager looks of the eagle are all ardour, and, levelling his neck for flight, he sees the fish-hawk once more emerge, struggling with his prey, and mounting in the air with screams of exultation. These are the signal for our hero, who, launching into the air, instantly gives chase, and soon gains on the fish-hawk. Each exerts his utmost to mount above the other; displaying, in these rencontres, the most sublime aërial evolutions. The unencumbered eagle rapidly advances, and is just on the point of reaching his opponent, when, with a sudden scream, probably of despair and honest execration, the latter drops his fish. The eagle, poising himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp ere it reaches the water, and bears his ill-gotten booty silently away to the woods."

Many of the habits of this powerful robber are altogether cowardly and ignoble: if pressed for food, he devours carrion, which he steals in the same manner from the black American vulture. Dr. Richardson remarks, that "the industry with which the parents provide their young with food, is often attested by the air being tainted, to a considerable distance from the nest, by the smell of the fish that they are unable to consume.

That simple and matter-of-fact philosopher, Dr. Frankland, views the habits of this bird under a dif-

ferent light. "For my own part," says the doctor, "I wish the bald eagle had not been chosen as the representative of our country: he is a bird of a bad moral character; he does not get his living honestly: you may have seen him perched on some dead tree, where, too lazy to fish for himself, he watches the labour of the fishing hawk; and when that diligent bird has at length taken a fish, and is bearing it to his nest for the support of his mate and young ones, the bald eagle pursues him and takes it from him. With all this injustice, h is never in good case; but, like those among men who live by sharping and robbing, he is generally poor, and often very lousy. Besides, he is a rank coward: the little king-bird, not bigger than a sparrow, attacks him boldly, and drives him out of the district. He is, therefore, by no means a proper emblem for the brave and honest Cincinnati of America. I am, on this account, not displeased that the figure is not known as the bald eagle, but looks more like a turkey."

The Americans call this, very improperly, the bald eagle, from its white head: in its young state, it can scarcely be distinguished from the cinereous eagle of Europe (*A. albicella*); and both are among the most common birds of our menageries.

The Common Peacock.

Pavo cristatus, *Linn.*

All that is beauteous in the tints of the rainbow, or refulgent in the gems of the earth, and all that is splendid and dazzling in the feathered nation, is concentrated in this queen of birds; for the beauty of the peacock is truly feminine. The smallness of the head, adorned with what appears to be an artificial rather than a natural crest, the length and delicacy of her neck, the gentle swelling of her breast, and her Argus robe of many tints, — all conspire to give this impression to her beholder; and yet there are hundreds, nay thousands, who will pass such a paragon of loveliness with no other than an idle

glance, — whose souls seem incapable of embracing the true idea of perfect beauty, and who only appreciate that which is uncommon. Were it known that a paradise or a humming bird could be seen alive in any of our zoological gardens, — birds which, however beautiful, sink into insignificance before this, — half London would flock to see them : nay, if one of those monstrous abortions — a double-headed chicken, which we have more than once read of — could have been fed and reared, the owner would have made his fortune ! Thus does curiosity, in minds essentially vulgar, predominate over the lasting sense of beauty ; and the glories of the visible heavens, no less than the splendour of the peacock, are passed with indifference by unreflecting millions, because both are every-day sights.

The native regions of the domestic or common peacock are in the southern provinces of Asia, whence it was imported, " in the ships of Tarshish *," so far back as the reign of king Solomon. The gluttonous and debased Romans seem to have prized them more for the fancied delicacy of their tongues than for any thing else,— a part of the bird which no one in modern times would think of eating. The noble bird, however, was held in far different estimation by the Greeks, who considered it a fit emblem and companion of their fabulous queen of heaven ; and Juno was always represented accompanied by her peacock.

The habits of these birds in a state of nature have been thus described by an eye-witness: — They abound chiefly in close wooded tracts, particularly where there is an extent of long grass for them to range in. They are very thirsty birds, and will remain only where they can have easy access to water. If there be trees near such spots, the peacocks may be seen mounting into them to roost, every evening towards dusk : here they continue until the sun rises, when they descend to feed ; and pass the mid-day in the heavy covers. They are very fearful of all quadrupeds, especially of dogs, since they are

* 2 Chron. ix. 21. 1 Kings, x. 22.

preyed upon by jackals, and probably by tigers. Their nest is made on the ground, commonly on a bank slightly raised above the surrounding level, where, in some appropriate bush, they collect leaves, small sticks, &c.; and sit so close as not to be scared even by passengers whom they can see: they hatch from twelve to fifteen eggs, and the old birds attend and lead out the young in the same way as our domestic fowls.

The peacock is not found within a considerable distance round Calcutta; but, according to captain Williamson, whom we are now quoting, their general rendezvous seems to be in the Junglelerry district: all the woods in the nabob of Oude's territories are full of them. "In the passes of the former district," observes our author, "I have seen such quantities of peafowls as have absolutely surprised me: whole woods were covered with their beautiful plumage, to which a rising sun imparted additional brilliancy! the small patches of plain among the long grass, most of them cultivated, and with mustard then in bloom, which induced the birds to feed, increased the beauty of the scene. I speak within bounds, when I assert that there could not be less than 1200 to 1500 individuals, of various sizes, within sight at once. Quite fascinated with so grand a display, I refrained from disturbing them. I have frequently seen great numbers assembled, but nothing to compare to what I witnessed on this occasion, where one might have thought all the peacocks within fifty miles had assembled by common consent.* The female peacock, like several other rasorial birds, after ceasing to lay eggs, not unfrequently assumes the plumage of the male; and in an instance which fell under the personal knowledge of Dr. Latham, the deception as to sex was so perfect, that the old female, at the time of her death, appeared in the plumage of a young male. In former times, the feathers were much valued as ornaments, and the crest was used as an ornament by the higher ranks both in India and in this country. In the

* Oriental Field Sports, ii. 61. General Hist. of Birds, viii. 113.

reign of king John, a fine was levied on one Ernald de Aclent, among which peacocks' feathers formed one of the items; and even so late as queen Elizabeth's reign, the ocellated feathers of the train were made into costly fans: the price, however, doubtless, depended more upon the value of the handles, which were generally of silver, and sometimes of gold, than upon the feathers. Albinos, or white peacocks, are not uncommon; yet, even in these the ocellated spots may still be traced by a different undulation in their shade. It has been said by Dr. Latham, that the peacock has also been found in a wild state in Africa; but there seems no good authority for this assertion, and we do not believe it; still less do we attach any credit to that by the same writer, of its being "found *wild* at St. Helena, also at Barbadoes, and other West India islands:" such localities appear to us as improbable, as that England was one of the native regions of the American humming-birds.

Peacock-shooting is one of the field sports of our countrymen in India. It is somewhat dangerous, however, inasmuch as the places they inhabit are also such as are in general most frequented by the tiger. When numbers are scattered in a jungle, it is easy to get a shot; but captain Williamson says he always found much difficulty when the birds unite in flocks of forty or fifty together, as at such times they suddenly become extremely shy, they will not then rise on the wing, and they run so remarkably fast, that a heavy spaniel or pointer can seldom catch them. When on the wing, like nearly all rasorial birds, they fly strong, but very heavy; and if merely winged, they soon recover their fall, take to their legs, and generally escape. The most certain mode of killing one or two birds, is by stealing under the trees at night, particularly when the moon is sufficiently bright to enable the birds to be clearly distinguished and easily shot. They may also be run down by horsemen. When a bird is discovered in a tree, which is frequently the case in those districts where they are plentiful, a person on an active and

docile horse, being provided with a long whip, may eventually so completely fatigue it as to lash it down, or twirl the whip round its neck. In other parts of India, as one of our old travellers assert*, the natives catch them by carrying lights to the trees upon which they roost, holding up, at the same time, painted representations of the bird; and when the peacocks stretch out their neck to look at the figure, a noose is passed over their head by which they are secured. The age of the peacock is stated in some instances to be very great. Aristotle mentions twenty-five years; but one is recorded† which belonged to Mr. Hinwood, of Cordenham in Cornwall, which, after attaining to the alleged age of ninety, was accidentally killed.

The peacock, as a domestic bird, is now more ornamental than useful: although formerly they were much more valued for the table than they are now, yet at the present day they are esteemed, when young, as a great delicacy. The young may be fed upon curd and barley-meal, and similar substances: in five or six months they attain to their full size, but do not acquire the perfect brilliancy of their plumage until the third year.

The expansive power of the train is well known: most persons, indeed, believe this is the tail; but the true tail consists of brownish, plain coloured feathers, not more than eighteen inches long; whereas those gorgeous plumes, which generally bear this name, are no other than the upper tail covers, developed to an unprecedented length, and which, when expanded, are supported from behind by the real tail. There are several instances of this developement, although in a less degree, among rasorial birds, no less than in their representatives: the most remarkable of these, among the latter, is our *Calurus resplendens*, or resplendent trogon of tropical America.

A lengthened description of a bird so well known, is entirely unnecessary in this place; yet a brief notice of

* Tavernier, iii. 57. † Lath. Gen. Hist.

its general characteristics may properly be added. The crest has twenty-four lance-shaped feathers, of which the naked shafts represent the handles, and the webbed tips the heads. The body, above, is golden green, glossed with brassy: the wing covers are green gold with brassy reflections; the under parts of the body being dusky, varied with green gold: the sides of the head have two narrow white stripes—one above, the other below the eye. The superb ocellated spots of the tail covers commence at the lower part of the back; and the feathers gradually become longer and longer, until they sometimes reach a length of four feet and a half; in addition to this ornament, the male is distinguished by a strong sharp spur on the tarsus, nearly an inch long. The female is rather less in size; its crest is shorter; and the tail covers are not only destitute of those resplendent spots seen in the other sex, but they are even shorter than the tail itself.

The Java Peacock.

Pavo Javanicus, *Horsf.* (*Fig.* 23.)

This, which is the only other species of peacock yet discovered, is a much rarer bird than that we have just described: so rare, indeed, that although the naturalists of Europe had acquired some ideas of it from the imperfect account of Aldrovandus, its positive existence only became authenticated at the commencement of the present century; nor was it until within these few years, that two living specimens, sent from the Burmese territory, were presented by lord Holmesdale to the menagerie of the Zoological Society of London. Aldrovandus, in fact, acquired all his knowledge of this interesting bird from two drawings which were among the presents sent by the then emperor of Japan to the pope. Another drawing, also made in the same country, was sent to Dr. Shaw, who published it in his *Naturalist's Miscellany*. But still no specimen of the bird itself was known to exist in Europe, until Dr. Horsfield procured it in Java.



Linnæus, deceived by the imperfect accounts then existing of the bird, was led to believe the male was destitute of spurs, and hence called it *Pavo muticus:* this name, however, has now been very properlychanged for that of Dr. Horsfield, under which it now appears. Mr. Bennett* remarks, that, in confinement, the pair in the Zoological Gardens are nearly similar in their manners to the common sort; and we are quite ignorant of their habits in a state of nature.

In general size and structure, there is little to distinguish the present from the preceding species; they are both nearly of the same size; but the Javanese peacock is readily distinguished by having a crest double the length of the other, and by the feathers themselves being barbed or webbed for their entire length, and of equal breadth throughout. The head and crest alternately reflect blue and green; the sides of the head, including the region of the eye and ears, are naked, and are light yellow, passing into blue green: the feathers of the neck and breast are scale-like, of a rich blue green colour, edged with a broad metallic border: the wing covers are like the back, but deeper: but the quills are light chestnut: the tail feathers, and their elongated covers, are of a splendid metallic brown, glossed with dark green; the barbs or webs are extremely long, silky, and discomposed, terminating, as in the common peacock, in beautiful ocellated spots. It is to be hoped that this species may soon become better

* Gardens of the Zool. Society, ii. 270.

known in our parks and menageries than it is at present.

Refulgent Lancecrest.

Lophophorus refulgens, *Temminck.*

Phasianus Impeyanus, *Latham, Ind. Orn.* ii. 632. Impeyan Pheasant, *Lath. Syn. Supp.* 208. pl. 114. Lophophorus resplendens, *Temminck, Pig. et Gal.* ii. 355.

Although this truly refulgent bird has never yet, so far as we are informed, been brought to England alive, there seems to be no valid reason why the attempt would not, with sufficient care, succeed. It is true that lady Impey, many years ago, attempted to bring some over with her from India to this country; yet, although the trial was unsuccessful, we apprehend the failure was more likely to have been caused by incidental than by insuperable difficulties. A voyage from India, forty years ago, was a very different thing to what it is now, both as to time, and comfort, and convenience; and the few slight notices we possess of the species in question, so far from being unfavourable to the idea of its not enduring the climate of this country, are of a directly opposite tendency. According to Dr. Latham *, who seems to have derived his information from lady Impey herself, these birds only inhabit the mountains in Northern Hindostan; so that, when brought to the plains of Calcutta, they were regarded as a curiosity: hence they bear cold very well, but are said to be impatient of heat; and although wild in their native state, they soon became reconciled to confinement. Lady Impey's specimens were fed upon rice in the husk, upon which, it seems, they thrived very well for two months of the voyage; and their death was altogether attributed to a disorder caught from the other poultry in the ship. With these facts upon record, we trust that such friends or members of our new Ornithological Society as may be in India, will use their

* Gen. Hist. of Birds, p. 211.

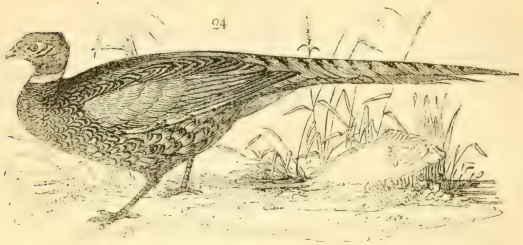
best endeavours to accomplish so desirable an object; and that, ere long, we may be in possession of living specimens of the superb creature we shall now describe.

The size of the male is rather larger than the common domestic cock. On the head is a lance-shaped crest of seventeen or eighteen feathers of different lengths; but the longest does not exceed three inches and a half. The feathers of the head, neck and throat, are lanceolate and pointed; and are of the richest green bronze, changing to deep purple towards the middle of the neck: this colour again blends into a golden copper hue; but these colours are so exceedingly brilliant, and so changed by every different reflection of light, that it is almost impossible to give an exact description of them. The back and wing covers are rich purple, edged with a brilliant greenish bronze colour; but the quills are entirely black: the under plumage, from the chin downwards as far as the vent, is of a dull black, partially glossed with green: the legs are feathered just below the knees, and are of the same colour: the tail is of a beautiful and delicate cinnamon colour, verging towards orange; it has fourteen feathers, slightly rounded, and rather darker at their tips. The tarsus has one strong spur.

The female is somewhat smaller than the male, and does not appear to have the resplendent crest which ornaments that sex; its colours, likewise, are totally different. The upper plumage is dark brown; each feather being pale fulvous in the middle, mottled with the general hue of the back, in such a way as not to be greatly different, as Dr. Latham remarks, to those on the back of the great eared owl: beneath the eye is a broad dusky white stripe. The quill feathers are black; but the lesser are banded also with ferruginous: the tail is brown, and hardly exceeds the wings; while the legs have only a tubercle in place of the spur seen in the male.

The Ring-necked Pheasant.

Phasianus torquatus, *Temm.* (*Fig.* 24.)



M. Temminck, who has paid much attention to the rasorial birds, was the first to point out the distinctions between the genuine ring-necked pheasant of China, and those hybrid races, which, from having originated from crosses with the common species, had induced ornithologists to believe that the species itself was a mere variety. It should, and we believe it will, be one of the primary objects of the Ornithological Society to preserve all those real species of rasorial birds which may come into their possession, pure and distinct; so that, whatever hybrid races may arise from crossing the different breeds, examples of the true species may be always seen and consulted.

This elegant bird is stated to be very common in the northern provinces of the Chinese empire, where it is found in the same districts and places as the common European species; with which, however, in a state of nature, it does not associate. Independently of its peculiarities of plumage, the eggs of the ringed pheasant are bluish green, variegated with small spots of a deeper tint; whereas those of the common species are of a very pale olive, without spots.

M. Temminck, upon whose authority these two pheasants were first separated, observes, that the present species is always less, the expanse of its wings smaller

and the tail comparatively shorter. The upper part of the head is tawny, with a greenish gloss; above the eye are two white stripes, and the rest of the head and neck are of a deep and brilliant green, glossed with violet; this colour being terminated abruptly by a snow-white collar just above the breast: the feathers of the back have their centres black, and surrounded with an undulated whitish band, the tip terminating in a black arrow-shaped spot: the shoulder feathers are black at the base; marked in the centre with a whitish pupil surrounded by a black ring; and chestnut, with a purple gloss, towards their tips: the tail covers are light green, with loose silky barbs: the breast is of a brilliant reddish purple, having the sides pale yellow: the under plumage and thighs are black, glossed with violet; and the tail feathers are olive green in the middle, the edges shaded with violet red, and crossed with broad black bands. The female differs considerably from that of the common species, in having a stripe of very short dusky feathers beneath each eye; the plumage, also, is duller, and the breast is remarkable by being considerably spotted: the black bars on the tail are much more conspicuous in this than in the male sex.

The ring-necked pheasant, so common in aviaries, is almost always of a hybrid race, produced between this and the common species: it unites, in a greater or a less degree, the characters of both; but the white ring is always much narrower than in the pure species, and is frequently almost obliterated.

The Golden Pheasant.

Nycthemerus pictus, *Sw.* (*Fig.* 25.)

Phasianus pictus, *Linn.* Nycthemerus pictus, *Class. of Birds*, ii. p. 341. Painted Pheasant, *Edwards*, pl. 68, 69.

The species of this subgenus of pheasants are distinguished from those of *Phasianus*, by the head being more or less naked, and, in the males, possessing either a fleshy or a feathered crest; thus forming a link of con-

nexion between the common pheasants and the domestic fowls.



This is one of the most magnificent as well as the most common species seen in our aviaries, where it has been long since introduced from the East: in a wild state it is chiefly found in China. Although it is well known to breed in this country, this is attended with much difficulty, and requires great care and attention.* According to the opinion of M. Temminck, this difficulty partially originates in the close confinement in which these birds are usually kept, and in the very precautions that are taken to preserve them from the effects of cold. He advises that they should be gradually habituated, like the common pheasant, to the large preserves in which the latter are kept: the experiment, he assures us, has already been made in Germany, where they have been kept at perfect liberty in an open pheasantry, in company with the common species, and suffered no greater inconvenience than the latter from the change of the seasons. This experiment is well worth trying in this country; and was projected, in 1831, by the Zoological Society, but with what success we have not heard.

The male bird, when in adult plumage, is nearly three feet long, of which the tail alone generally occupies two feet. The crown is adorned with an elegant pendent crest of long, silky, bright yellow feathers; while those on the back of the neck are brilliant orange, marked with transverse black bars: these feathers are also elong-

* Bennett, Zool. Gardens, ii. 62.

ated, and hang over the sides of the neck; and, like the crest, they are also capable of being elevated or depressed at pleasure: the cheeks are livid, and are only partially furnished with a few short hairs: the feathers on the back of the neck are tinged with a mixture of green and gold, bordered with black: the back and the upper tail covers are bright yellow; the latter being terminated by a black border: over the base of each wing is a broad patch of deep blue, passing into a violet tinge: the wing covers and secondary quill feathers have various shades of chestnut and brown: the tail feathers are varied with chestnut and black; the colours being disposed in oblique rays upon the lateral quills: immediately above the base of the tail, the feathers are of a beautiful scarlet: the throat is dusky brown; and all the rest of the under plumage bright scarlet: the legs, bill, and irides are pure yellow. The tarsi are armed with moderate-sized spurs.

The female, like all others of the rasorial group, is much plainer coloured than the male. The upper plumage is rusty brown; the under, marked with deep brown spots on a lighter ground: the throat is whitish; and the wings are crossed with black bars: the head is crested, but the feathers are brown, and shorter: the tail, also, is much less developed than in the male.

The eggs are said to resemble those of the Guinea-fowl; being redder than those of the pheasant. The food given to these birds in confinement, is various sorts of grain, as rice, hemp, wheat, &c.; but they will also eat cabbages, herbs, leaves, fruits, especially plums (?), and insects: the latter, it is said, is their favourite food; and the difficulty of procuring a sufficiency is thought to be one of the causes of disease. The female deposits her eggs about March; and the young, which are hatched in twenty-three days, require three years to attain their perfect or adult plumage.

The Silver Pheasant.

Nycthemerus argentatus, *Sw.*

Phasianus Nycthemerus, *Linn.*, *Auctorum*. Faisan noir et blanc, *Buffon*, *Pl. Enl.* pl. 123. male. 124. female. Black and white Pheasant, *Edwards*, pl. 66. Pencilled Pheasant, *Lath.* Silver Pheasant, *Zool. Gard.* ii. pl. at p. 63.

The silver pheasant is, perhaps, a more elegant, although certainly a less showy, species than the last, with which it has been long domesticated in our aviaries and preserves. From being a native of the more northern provinces of China, its constitution is more hardy, and it is found to breed much easier with us, than the golden species; so much so, indeed, that Mr. Bennett is of opinion "it may be reduced to a state of domestication almost equal to that of the common fowl:" he further adds,—"it thrives even better in domestication than the common pheasant, and breeds with tolerable facility; so that it might, in all probability, be readily propagated in the open country. We believe that this has been in some instances attempted with success." *

The size of the male is about that of the golden species, and the tails of both are equally long. The bill and irides are yellow; but the legs are red, and armed with a white spur: the sides of the head are a bare, warted, crimson skin, capable of distention; it is prolonged above the eyes in the shape of a comb, and falls on each side of the mouth so as to form two wattles: on the head is a long pendent crest of loose webbed feathers of a deep purple: all the upper plumage is white; each feather being marked, in the most elegant manner, with delicate undulated lines running parallel to the margin: this forms a beautiful contrast to the under plumage of the neck and body, which is of a uniform purplish black: the tail is marked like the feathers of the back, excepting the two middle pair, which are plain white.

The female differs very considerably from the male.

* Zool. Gardens, ii. 64.

The whole of the upper plumage, together with the neck and part of the breast, are of an earthy brown : from the lower part of the breast, to the under tail covers, the ground colour is dull white, irregularly varied with brown, and crossed by transverse blackish lines : the eyes are surrounded with a naked red skin, but much narrower and less bright than in the male : the tail is brown, much shorter than in the other sex, and having the lateral feathers mixed with white, and obliquely striped with black. The eggs are from eight to fourteen, and are generally laid in April ; their colour is reddish yellow, varied with white, and sprinkled with a few small brown spots. The young are hatched in twenty-six days.

The Honduras Turkey.

Meleagris ocellata, *Cuvier.*

Primary quills white, spotted with black : tail and the upper covers ornamented with ocellated iridescent spots.

Meleagris ocellata, *Cuv., Mus. Paris. Temminck, Pl. Col.* 112. *Plate in Griff. Cuv. by Hamilton Smith.**

The common wild turkey of America, the origin of our domestic race, has been so repeatedly and so fully described, that its introduction here would be altogether superfluous. Not so, however, with the present species, which we believe has never yet been seen alive in Europe, and is even so rare in our museums, that only one specimen, now in that of Paris, is known to exist Of its natural history, we absolutely know nothing more than that it inhabits the woods of Honduras. We can, therefore, merely give a short account of its plumage ; chiefly with a view of calling the attention of our coun-

* We quote this figure as by far the best, and as having been drawn by major H. Smith, from the life, at Honduras,—a fact sufficiently vouched for by the natural ease of the attitude, and the correctness of the details ; and yet, strange to say, there is not one word inserted in the text relative to its habits, &c., something of which might have been procured from the accomplished naturalist, who had drawn it on the spot from a living specimen.

trymen, stationed at that settlement, to the existence of a bird in the neighbouring tracts, which would be the most valuable addition that any menagerie or museum in Europe, could receive.

In general size, structure, and proportions, this magnificent bird resembles the common species: the head and neck are equally naked and carunculated, but there does not appear any tuft of hairy feathers on the middle of the neck. The feathers of the lower part of the neck, the interscapulars, the scapulars, and of the under plumage, are of a rich green bronze, with a line of black, and another of copper green, at the edge of each. This colouring becomes more brilliant towards the rump, where the bronzed green changes to a fine sapphire blue, but in some lights to an emerald green; the bronzed border gradually becoming broader: these parts also reflect a brilliant copper red, rendered more striking by a velvet-black line, which divides it from the green and blue tints. The upper tail covers and the tail itself have an ocellated spot, partly blue and green, surrounded by a black circle, and edged on the side of the tip with a broad band of golden copper: there are about four ranges of these ocellated spots, separated by a grey space marked by dusky brown lines. The flank feathers are like those of the rump, but they are of a deeper green, and the golden line is more rufous: the lesser wing covers are emerald green, with a narrow velvet-black band; the next range are golden copper: spurious wing and greater wing covers brown, with transverse white bands; quills the same; but the outer margin of the shorter primaries, and nearly all the secondaries, are white, forming a band. Legs elevated, and apparently red in the living bird: the spurs stronger and sharper than in the common species.

Crested Curassow.

Crax Alector, *Linn.*

Body, above and beneath, black; the belly white: cere yellow, united to the naked sides of the head.

Crax Alector, *Linn., Auct., Temminck, Index*, p. 689. Hocco de la Guiane, *Buffon, Pl. Enl.* Hoco Moluporanga, *Temm. Gallin.* iii. 27.

This appears to be the most common, and the most easily domesticated, of all the species of curassow; but it seems to us that the accounts which authors continue to copy from each other as to its natural history, are in many respects erroneous. It is said, "that they are tolerably plentiful, and make a considerable part of the food of the planters, and the Indian hunters take them in *great quantities*, as they are so tame that they will scarcely fly away when several of the flock are shot, —the noise of the gun not in the least alarming them;" and that "in many parts of South America they have long been reclaimed." That these birds might have been as common as is here stated, a century ago, when the soil of Guiana and Brazil had just begun to be cultivated, is very possible; but such a state of things has long ceased to exist. Through all the tracts in the latter country, and in its different provinces, which we traversed, solely with a view of collecting its zoological productions, we found all the large game exceedingly scarce; nor were we fortunate in procuring a single specimen of the *Crax Alector*, although we sometimes heard of its being occasionally seen by the remote planters located on the verge of the unoccupied tracts. As to this or any other species being kept in the poultry-yards of the native Brazilians, we never saw a single reclaimed specimen, through a tract of territory which we traversed, extending some hundreds of miles. In Guiana, these birds have long become so scarce, that in a collection of many hundreds made in that country by

Mr. Schomberg, there are not three specimens of the whole genus.

The species now before us, has the whole upper plumage, including the head, neck, breast, wings, and tail, of a deep and uniform black, glossed with green: the bill, vent, and under tail covers, however, are invariably white; and this latter colour generally tips the tail feathers. The crest on the crown is very remarkable, and unlike that of nearly all other birds; the feathers are from two to three inches long, rather narrow, and twisted at their extremities so as to resemble little balls; in the young males they are much shorter: the sides of the head are naked, and the skin is yellowish, but not near so bright as that upon the cere, which covers more than half the base of the bill.

Numerous specimens of this species have been at various times sent to the Zoological Society; but it does not appear that the keepers have been successful in breeding them, as was formerly, and, as we hear, is now, practised in Holland. We hope and trust, however, still to hear this object has been accomplished.

Globe-billed Curassow.

Crax globicera, *Linn.* (*Fig.* 26.)

Body, above and beneath, black; abdomen white: bill with a gibbous protuberance in front; orbits slightly naked and black, divided from the yellow cere.

Crax globicera, *Linn.*, *Auct.*, *Temminck*, *Gall. Ind.* 686. Hocco Fencholi, *Temm. Gall.* iii. 12. Hocco, *Buffon*, *Pl. Enl.* 86. young. Curassow Cock, *Edwards*, 295. fig. 1.

According to the description of the authors above quoted, the plumage of this species is precisely the same as that of the last; the difference between them chiefly, if not exclusively, consisting in this having a globular tubercle, about the size of a hazel nut, or cherry, at the base of the bill, which is covered in that part, as in the last species, by a lively yellow skin: the naked part of



the head, around the eye, is very small, and is black instead of yellow; it is also separated from the cere by feathers, instead of forming one continuous naked space, joining the bill: the nostrils are placed in the cere, and are situated before and below the tubercle; the rest of the bill, and also the legs, are horn colour. The female is stated to be almost exactly like the male; and both appear to have a similarly formed crest to the last. In the young, the tubercle only assumes the shape of a slight prominence; and the plumage is of a duller black, transversely lineated with white; these lines disappearing as the bird advances in age. The adult plumage is generally acquired in the second year.

Between this species and the next we shall describe, namely, the *Crax rubra*, a hybrid breed is said to have been produced, having the following colours: — The plumage, in general, was dull blackish brown; the abdomen rufous, where *C. globicera* is white; the crest varied with black and white; the tail black, tipt with white; and the rest of the plumage marked with slender transverse bars of white. The bill had no appearance of tubercles. Such was the plumage in a young state: when more advanced in age, the head and hind part of the neck became deep black; the crest black, with a white band; the upper part of the belly white; the lower part, vent, and thighs pale yellowish brown.

This species is said to inhabit Guiana. Temminck describes the two following as hybrids, but upon what authority does not appear. The first is dull brown, having the upper part of the belly white; the last black, with four white bands, and the feathers of the crest

tipt with white. The second has the body black, banded with rufous; the crest white, tipt with black; and the neck alternately banded with white and black.

The Red Curassow.

Crax rubra, *Linn.*

Plumage chestnut; neck transversely lineated with white and black; tail banded with whitish; cere black; sides of the head feathered.

Crax rubra, *Linn.*, *Auct.*, *Temminck, Gall. Ind.* 687. Hocco Coaclitii, *Temminck, Gall.* iii. 21. Hocco de Pérou, *Buffon. Pl. Enl.* 125. (*Fig.* 27.)



This species, which, like the two preceding, is of the size of a turkey, may be at once known by its chestnut plumage: whether or no the other birds, placed by M. Temminck as hybrids, and by Dr. Latham as varieties, are really such, or distinct species, there are at present no means of determining.

The red curassow has the crest black, with a band of white in the middle: the forehead, sides of the head, and the top of the neck are pure white, each feather being fringed or edged with black: the whole of the body, both above and below, is of a uniform chestnut brown; the tail is the same, crossed with eight or nine yellowish white bars, freckled with minute dusky spots.

and bounded above and beneath with blackish: the legs are yellow. Dr. Latham says that the base of the bill, over which the cere extends, is gibbous, but varies greatly in degree according to the age of the bird; and that it is always smallest in the females: he further adds, that the space round the eye is not always the same; as in some birds it is bare, while in others it is covered with short feathers. The first variety, or hybrid, differs in having the lower part of the belly and vent white, and the tail without any bands: the second is confessedly a young bird, which was hatched in the menagerie at Osterly Park *, and was barred all over with cream-colour: the third is described by Latham as follows:—Cheeks naked: bill horn colour; crest white, with the end black; head, neck, breast, and upper part of the back plain black; wings, quills, and upper tail covers marked with pale rufous and black bars; tail black, crossed with distant yellowish white bands, and tipt with the same; under plumage pale yellowish rufous.

Wattled Curassow.

Crax carunculata, *Temminck.*

Pig. et Gall. iii. pl. 4. f. 3. the bill.

We insert this rare species, as it has been described by M. Temminck, that the attention of Englishmen, resident in Brazil, may be directed to it; for, at present, it is only known from a single stuffed specimen preserved in that country, which is probably now in M. Temminck's collection in Holland.

The whole plumage, with the exception of the abdomen, which is chestnut, is uniform black, glossed with green; the legs alone being brown. It chiefly differs from all others, however, in its bill, which is shorter and stronger than in *C. Alector*, and it has the upper mandible more elevated; the cere at the base is red, and it is prolonged on each side of the under mandible,

* Lath. Gen. Hist. viii. 154.

where it forms a small rounded wattle: the orbits are naked, but the lores feathered: the head is ornamented with the same sort of crest as is common to all the preceding species.

Helmet Curassow.

Lophocerus galeata, *Sw.* (*Fig.* 28.)

Body black, glossed with green; belly and tips of the tail white: base of the beak with a horny blue pear-shaped tubercle.

Crax Pauxi, *Linn.*, *Auct.*, *Latham*, &c. Crax Galeata, *Lath. Ind. Orn.* ii. 624. Le Purre de Cayenne, *Pl. Enl.* 78. Cushew Curassow, *Edwards*, pl. 292. f. 2. The Galeated Curassow, *Bennett, Zool. Gard.* ii. 65. Ourase Pauxi, *Cuv. Règ. Anim.*

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The form of this extraordinary bird is, perhaps, the most interesting to the scientific ornithologist of any in the whole genus of curassow birds, inasmuch as it is that which makes the nearest approach to the Guinea-fowls, by possessing that singular horny process on the head for which those birds, as well as the cassowary, are alike distinguished. These processes on the heads of birds are unquestionably analogous to the horns of quadrupeds; and as they are only found in those birds which belong to the rasorial type, so are horns only

found among those quadrupeds which belong to the ruminating order. This analogy we have so amply and repeatedly verified in our former volumes, that nothing more need be said upon the subject in this. In enumerating the five types of the genus *Crax* *, an experienced ornithologist will perceive that, without exactly designating them as representatives of the five types of the Animal Kingdom, we have so arranged them that the series form a circle,—*Crax* being the first, and *Lophocerus* the last: hence it results, that, if *Crax* be the pre-eminently typical, *Lophocerus* must be the rasorial. Now, this is borne out in a remarkable manner by the structure, both external and internal, of the latter. *Lophocerus* has the outward form of the rasorial type in its helmet-like bill; and it has that peculiar developement of the windpipe, which is not only an indication of the same type, but is a character also which brings it into immediate junction with *Crax Alector*, — the only two birds of this circular group which anatomists have yet discovered to possess this particular formation: thus is the circle of the *Cracidæ* classed. But another affinity of equal importance results from this view of the subject. The *Cracidæ* and the *Pavonidæ*, as we have elsewhere shown, blend into each other; but the difficulty has hitherto been where to find the links of connection. A careful analysis of the two groups, undertaken with the sole object of ascertaining this question, showed us that, in the series of forms among the rasorial groups, no birds came so near to the *Lophocerus galeata*, as those of the genus *Numida*, or Guinea-fowls: these have been placed by all writers close to the turkeys; and the Honduras turkey is so close to the genus *Pavo*, that it actually seems half a peacock. The series, therefore, between the *Cracidæ* and the *Pavonidæ* being so obviously complete, it follows that the five great divisions of the whole order *Rasores* constitute a circle, of which the helmet Guinea-fowl is the first link, and the helmet curassow is the last. We

* Classification of Birds, ii. 352.

have thought it expedient to introduce this subject on the present occasion, since our space on a former would not allow of its exposition. Not having a specimen of this rare bird before us, we shall adopt Mr. Bennett's description, taken from a living example which was then in the Zoological Gardens.

The size is about equal to that of the crested curassow. "Its head and neck are covered with short black velvety feathers; and all the rest of the plumage, with the exception of the whole abdomen and under tail covers, are of a brilliant black, exhibiting in certain positions a tinge of green: the tail feathers are tipt with white: the legs are red; the claws yellow; and the iris brown. The bill is of a bright red; and the protuberance by which it is surmounted (which is rounded in the young birds, and pear-shaped in the adult males), is of a livid slate colour. This remarkable projection is more than two inches in length, when fully developed; it is hard and bony externally, and internally cellular, — the cells communicating with the cavity of the mouth: it is not visible until after the first moulting, when it begins in the form of a small tubercle: it becomes much larger in the male than in the female. In other respects the sexes are nearly the same: the young are only distinguished by a browner tinge. The windpipe descends for a considerable distance in front of the sternum, immediately beneath the skin, and makes no less than three distinct convolutions before passing into the cavity of the chest." These birds, continues Mr. Bennett*, "are natives of Mexico, and live in large bands, perching upon the trees, but more commonly building their nests upon the ground. The females lead their young about in the same manner as the common hen. They subsist at first upon worms and insects; but, as they grow older, they feed also upon fruits and seeds. They are easily domesticated, even when taken adult; and appear to be equally

* No authority is cited for this statement, which of course does not rest on personal knowledge.

capable of being acclimated in Europe, with any of the other curassows. M. Temminck enumerates them among the birds which bred abundantly in the menagerie of M. Ameshoff, prior to the breaking out of the French revolution."

Red-billed Curassow.

Ourax erythrorynchus, *Sw.*

Glossy blue black: belly and under tail covers rufous: head with short frontal crest; bill and feet bright red.

Crax Mitu, *Linn.*, *Auct.* Crax Alector β, *Lath. Ind. Orn.* ii. 623. Pauxi Mitu, *Temminck*, *Gall.* iii. 8. pl. 4. f. 2. the bill. Ourax Mitu, *Cuv.*, *Temm. Pl. Col.* Crested Curassow, Crested Pauxi, *of British Authors.*

Specimens of this rare species were found by Mr. Schomberg in the interior parts of Guiana, bordering the River Tokoto; and he subsequently had an opportunity, as he informs us, of observing it in a domesticated state at the residence of one of the planters. It was so perfectly tame as to walk about the room, and receive its food from the hand of its owner. It took great pleasure in contemplating itself in the mirror which was placed in the room, and seemed to turn round in admiration of its own beautiful glossy plumage and graceful motions. Towards the other domesticated birds of its master, it asserted a kind of sovereignty to which they all appeared to submit. In a wild state, its note resembles a low moan, which is heard from the forest soon after sunrise. This notice is very interesting, particularly as it relates to a bird of whose manners nothing has yet been recorded beyond the information of its inhabiting Brazil; from which part, however, we have never seen or heard of a specimen.

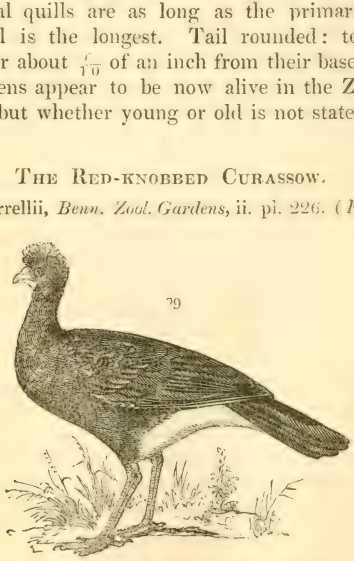
The plumage is sufficiently described in the above specific character; although it may be added, that the Guiana specimens do not exhibit any white tips on the tail feathers. This circumstance, together with the absence

of any elevated sharp ridge on the culmen, near the front, would almost make us believe that the bird received from Mr. Schomberg was different from that described by authors and figured by M. Temminck, had it not been mentioned that the young of their bird, has "the bill of a paler red, and the elevation upon it much smaller." The question, however, is by no means decided; and we should not be surprised if the Guiana bird turns out to be a distinct species. To facilitate further comparisons, we shall here insert its dimensions: — Total length about 31 inches; bill, from the gape $1\frac{1}{5}$; height at the base $1\frac{1}{10}$; wings 14; tail, beyond, $10\frac{1}{2}$; ditto, from the base 13; tarsus 4; hind toe and claw $1\frac{1}{2}$; middle ditto $3\frac{1}{2}$; lateral ditto $2\frac{7}{10}$. The tertial quills are as long as the primaries; the sixth quill is the longest. Tail rounded: toes half-webbed for about $\frac{1}{10}$ of an inch from their base.

Specimens appear to be now alive in the Zoological Gardens, but whether young or old is not stated.

The Red-knobbed Curassow.

Crax Yarrellii, *Benn. Zool. Gardens*, ii. pl. 226. (*Fig.* 29.)



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The first account, as we believe, of this species of curassow, quite distinct from any that have yet been

brought to this country, was given by our late friend Mr. Bennett, in his elegant work above quoted; and it is accompanied by a figure, which, however forced and unnatural in its attitude, and quite belying the graceful form of the bird, is yet sufficient to show some of its peculiarities. The name he has bestowed upon it is most appropriate; for no ornithologist in this country has investigated the comparative anatomy of the rasorial and natatorial birds with such eminent success, and with such skilful tact, as Mr. Yarrell; and every one who desires to see honour given where it is really due, will preserve the original name imposed upon this interesting species.

Not having ourselves examined this species, we must depend upon Mr. Bennett for the exactitude of the following account. He describes the bird, excepting in its bill, as having little to distinguish it from the globose curassow already mentioned, although it is somewhat smaller in size. The whole plumage, in fact, is deep glossy black, with the exception of the belly, the vent, and the posterior parts of the legs, all of which are white. The crest is the same as in the other species: but the cere, instead of being yellow, is deep crimson, surmounted by an elevated prominence, much smaller than that of the globose species, and enlarged beneath, on each side the lower mandible, by a peculiar gibbous projection, which is not met with in any other species: the space between the eyes and the bill is feathered, leaving the naked skin round the eyes of the same deep black with the plumage of the head, from which it is hardly to be distinguished: these gibbous tubercles only become developed by age; for when the specimen was first obtained, there was only a slight prominence above, and none beneath the bill. Another specimen, which seems to be in the Tower menagerie, is smaller, and may be either a young male or the female: it has the under parts of a light brown, instead of pure white.

This bird is obviously allied to M. Temminck's *Crax carunculata;* but in the figure he has given, as Mr.

Bennett justly observes, there is nothing of the knob-like elevation in front, seen in this; "on the other hand, the enlargement of the cere beneath the lower mandible appears to be nearly similar: but in the living bird it bears no resemblance to a wattle; and consequently the names of *barbillon* and *caruncula*ta, given to M. Temminck's species, are totally inapplicable to this." This species is said to have been brought to England from the country bordering the east of Peru and the western confines of Brazil.

The Wild Swan.

Cygnus ferus, *Ray.*

Entirely white, without any protuberance at the base of the bill: cere pale yellow, encircling the eye.

Cygnus ferus, *Ray. Syn.* 136. *a. Selby*, 278. Cygne à bec noir, *Temm. Man.* ii. 828. *Pl. Enl.* 913.

There is so little external difference between the wild and the domestic swan, that ordinary observers, not accustomed to understand the value that often attaches to slight scientific distinctions, would almost suppose they were the same; and indeed, when such men as Linnæus and Buffon have fallen into the error of regarding these two species as mere varieties, it cannot be surprising that others have done the same. Their distinction, however, is now rendered unquestionable. The wild swan is entirely destitute of that prominence or protuberance at the base of the bill, adjoining the nostrils, which is a sure characteristic of the tame species: the colours of the bill are also different; for, in this, the yellow parts are at the base, while the remaining portion is black; as for the rest, the plumage is pure white, with an occasional tint of greyish yellow. In such birds as are in full maturity, — a state which is only reached in the fourth year, — the region of the eyes is bright yellow, the eyes themselves are brown, and the feet black.

The flight of the wild swan is lofty, bold, and rapid, particularly when sailing before the wind. According to Hearne, the best authority we can quote, they arrive in Hudson's Bay before any of the other aquatic fowl. When flying with the wind, they are extremely difficult to be shot; and they make their way so rapidly, that the sportsman must aim ten or twelve feet before their heads. Our author estimates, that, in a brisk gale, these birds cannot fly at a less rate than 100 miles an hour; but when flying across the wind, or against it, they make but slow progress, and are then a noble shot. The Indians and settlers prize them much, both for their flesh, their quills, and their down. The former is considered excellent eating, and, when roasted, is equal in flavour to young beef; and the cygnets are considered a great delicacy. When the rivers are frozen, they resort to the falls and rapids; where, from being more concentrated, they are shot with more certainty, and in larger numbers. They moult in July and August; and are then run down by the natives, although with much difficulty, as they make their way with great swiftness on the surface of the water. At these seasons they are hunted in Iceland, and other parts of Asiatic Russia, by horsemen and dogs, much in the same manner as hares. The nest is usually built in little islets surrounded with water: it generally contains about half a dozen eggs, of a dirty white, shaded with olive green; and so large, that one of them is enough for a moderate man, without bread, or any other addition.

The wild swan does not appear to have been met with by Dr. Richardson, or, at least, it is not mentioned in his account of the birds of Arctic America; but Mr. Selby, with his usual accuracy and precision, has given us much valuable information on those which visit the British islands. In the Orkneys and Western Islands of Scotland it seems to be a regular winter visiter; but in England its appearance is not so certain, being influenced by the state of the season. It is only, in fact, during very severe winters, that the swans

extend their migrations southward, and beyond their ordinary limits. In such seasons they usually come to England, in small flocks, from five to thirty together: they take up their abode upon the lakes, rivers and inundated meadows; where, if undisturbed, they will remain until the following March, and then return again to the north. It seems, from the accounts already quoted from Hearne, that this species breeds only in very high northern latitudes; but according to Mr. Selby, a few pair, it is said, occasionally remain upon some of the outer Orkney Islands, and there breed on the margins of the freshwater lochs.

The syren song of the swan before its death, which has been the theme of so much beautiful poetry, is now well known to be fabulous; for the voice of this, and all other rasorial types, is only remarkable for its harshness. Mr. Selby observes,—we have not heard it ourselves,—that it consists of two notes; and has, not unaptly, been compared to the discordant union of the modulation of the cuckoo with the scream of the gull, or the sound of the clarionet in the hands of a beginner. Some, however, still assert, that, when on the wing, in large flocks, or resting on the water, their united cries, becoming softened by distance, are not unpleasant to the ear. "This," observes Mr. Selby, "I can readily believe; for, under such circumstances, I have ever found the incongruous mixture of sound from gulls, guillemots, and other tribes of sea fowl (when collected about their breeding places), mixed with the whistling of the breeze, and the murmurs of the intervening water, to reach the ear, not very dissimilar to that of a band of martial music.*

The wild swan evinces as great an aptitude for domestication as the tame species. When caught alive, it soon becomes very tame; and when provided with a spacious piece of water, naturally furnished with its proper food, it will thrive equally well. It feeds upon the roots, stems, and leaves of aquatic plants; for pro-

* Ill. of Brit. Birds, ii. 281.

curing which, its long neck, as in other birds of its own family, is absolutely necessary. When swimming, it carries its neck much more upright than does the common swan, with little of that graceful arch for which the latter is distinguished. It walks, also, heavily and awkwardly, with the head lowered, and the neck reclining over the back.

The Tame Swan.

Cygnus mansuetus, *Ray.*

Entirely white: bill with a black protuberance at its base.

Cygnus mansuetus, *Ray. Syn.* 136. *a.* i. *Linn., Auct.* Le Cygne, *Buff. Pl. Enl.* 913. Cygne tubercule, *Temm. Man.* ii. 830. Tame Swan, *Edwards*, pl. 150. Mute Swan, *Pennant, Latham,* &c.

The countries inhabited by this majestic and well-known species in a wild state, are in a directly opposite situation to those of the wild species: the one living in the frigid regions of Europe, the other in the genial latitudes of the eastern provinces of that continent, but more particularly the great inland seas and lakes bordering upon Asia; where, according to modern travellers, the tame swan is still found in its native freedom. At what period it became domesticated, is wholly uncertain; but it has, for many centuries, been spread over all parts of civilised Europe; and of all the natatorial birds yet domesticated, it is justly esteemed the most graceful and imposing. Some writers mention that the tame swan is particularly abundant in Siberia*; but it is more than probable that they have mistaken the wild northern swans, *C. ferus* and *Bewickii*, for the tame one. Statements of this sort, made by travellers who are not naturalists, must always be received with suspicion, more especially in cases like the present, where even ornithologists themselves, by con-

* Zool. Gardens, i. 167.

founding all these three species together, have thrown doubt and difficulty on their several and peculiar habits and geographic ranges.

To expatiate upon the graceful and majestic movements of this noble bird, when slowly sailing upon the water, is quite unnecessary: it may literally be said to sail on the glassy element; for at such times its wings are gently raised, and the feathers sufficiently ruffled to catch the wind, and to perform the office of sails. Why their propagation has of late years been neglected, more especially on our public waters, it is difficult to say; but it must be a subject of great regret to every admirer of what is lovely and beautiful. There is, indeed, a vulgar error, which, in some measure, may account for this; namely, that the swan, in addition to its animal food of frogs and aquatic insects, likewise feeds upon fish; and hence it has been banished from many pieces of water where the preservation of the finny inhabitants was considered of more importance. But no fancy or assertion can be more unfounded than this, although gravely asserted even by ornithological writers. * It is not only contradicted by the well-known fact of these birds not causing the slightest diminution of fish in ponds where they have been kept for some time; but one of our best ornithologists has absolutely declared that he has never found, in the stomachs of any of the numerous individuals he has dissected, the least vestige of such a diet. †

Of the habits of swans in a state of nature, nothing of importance appears to be known; but the author of *The Zoological Gardens,* has made some remarks upon the domesticated race, which, as being useful to persons possessing these birds, we shall here repeat. — "To protect the tame birds from the severity of winter, it is usual to drive them into the same houses as the ducks and geese; but in such strict confinement they

* Latham, Gen. Hist. x. 223.
† Mr. Yarrell; see Zool. Gard. ii. 167.

entirely lose their spirits, become melancholy and diseased, and are constantly making attempts to escape. It is, therefore, much better, whenever it is possible, both with them and with the common sort of wild fowl, to leave them at liberty upon a piece of water; which, if their number is at all considerable, they will always keep open by their continual motion, without any risk of freezing their feet. Swans kept in this manner during the winter, are generally in much better condition at the return of spring, than those which have been confined to the house. During the greater part of the year, they will feed upon those plants, roots, and reptiles which are common to the sides of waters; but in winter they accommodate themselves to the same sort of artificial diet as it is usual to give to ducks and geese when under shelter. The nest of the swan is composed externally of the rudest materials, but is lined with the soft feathers and down of the parent birds. The female selects the most secluded situations on the banks of those waters which she frequents: she usually sits upon six or seven eggs, of a greyish colour, early in the spring; and when the young are hatched, the parents carry them to the water upon their backs; and this is continued for two or three weeks. Even when able to shift for themselves, the young continue with the parents until the next spring; when they are driven away by the old males.

The docility and gentleness of the swan is well known to all those who have witnessed the confiding manner in which it will receive its food from the hand; but, if treated with wanton cruelty or harshness, it is by no means a despicable enemy: the strength and muscular power of its wings is very great, and might endanger the fracture of a limb to those who wantonly assail it. The males, at the breeding season, like all other animals, whether docile or savage, when under that particular influence, will fight desperately, and frequently to the destruction of one of the combatants. Dr. Latham affirms, that he has known full-grown boys

of fifteen or sixteen injured by the attack of one; and it must be a powerful man who is able to withstand an encounter with an enraged male: even a horse has been lamed by one of these furious birds, when feeding along the edge of the water near which a female was sitting. "At Pewsy, in Buckinghamshire," continues the doctor, "while a swan was on the nest, she observed a fox swimming towards her from the opposite shore; when she darted into the water, and having kept the fox at bay for a considerable time with her wings, at last succeeded in drowning him, in the sight of several spectators." *

Swans, as before remarked, were greatly admired and esteemed by our ancestors: they were then, however, considered more an appendage to the establishment of the aristocracy; for Edward IV. enacted, that no one, possessing a freehold of less than the clear yearly value of five marks, would be permitted to keep these birds. Stealing swans that had been marked, or *nicked*, was then a felony. This process was performed on the bill of the bird with a hot iron; and the number, direction, and shape of these nicks indicated the noble family to which it belonged: three vertical marks characterised such as belonged to the "King's Highness;" and an old manuscript is said to exist in one of the libraries at Oxford, designating the swans' nicks of 304 families. Mr. Weston, in a curious paper upon swans †, conjectures, with every probability of reason, that the Swan with two *Necks*, — a well known sign in London and elsewhere,—is but a corruption of the swan with two *nicks*.

Abbotsbury, in Dorsetshire, was formerly, as it still is, famous for the multitude of its swans: this is mentioned both by Dr. Malone, and by colonel Montagu ‡, who says there were still between 600 and 700, although formerly there were as many thousands.

Swans are well known to be long-lived; but much

* Gen. Hist. of Birds, x. 222.
† Archæologia, xxi. 163.
‡ Orn. Dict. vol. iii. or Supp.

uncertainty hangs on the precise number of years to which they attain. Some content themselves with stating this period at thirty years; while others, adopting more marvellous reports, assert that there are many authenticated instances of swans living to the age of a century. The former may be believed; but the latter seems all but incredible.

BEWICK'S SWAN.

Cygnus Bewickii, *Yarrell.* (*Fig.* 30.)

Cygnus Bewickii, *Linn. Trans.* xvi. 446.

30



Until within these few years it was never suspected that, among the wild swans inhabiting our islands, there were two distinct species, confounded by all systematic writers under one name; or that this second species, to which the name of Bewick has been so justly attached, was also a native of Arctic America. In the Journal of Lewis and Clarke, it is more than probable that the *small* swan alluded to in the following extract, refers to that now before us:—"The swans are of two kinds; the large and the small. The large swan is the same as the one common in the Atlantic States: the small differs from the large only in size and note; it is about one fourth less, and its note is entirely different. These birds were first found below the great narrows of the Columbia, near the Chilluc-keti-quaw nation; they are

very abundant in this neighbourhood, and remained with the party all winter; and in number they exceed those of the larger species in the proportion of five to one." It thus seems to winter not further north than the mouth of the Columbia River. Dr. Richardson observes, that it breeds on the sea coast, within the arctic circle, and is only seen in the interior of the fur countries during the season of its passage. It makes its appearance in spring amongst the latest of the migratory birds; while the trumpeter swans, with the exception of the eagles, are the earliest. Captain Lyon describes its nest as built of moss-peat, near six feet long, four and three quarters wide, and two feet high on the outside; the cavity being a foot and a half in diameter. The eggs are brownish white, slightly clouded with a darker tint.

The plumage is entirely pure white, except the crown, nape, and upper parts of the neck, which are deeply tinged with reddish orange; and the belly, which is slightly tinted with the same: the bill and feet are black; but the cere and irides are orange. Old birds are said to be entirely white; while the young ones are grey. The second and third quills are the longest, and of equal length: the tail is wedge-shaped, and of eighteen feathers. The total length is about fifty-five inches, of which the wings occupy a little more than twenty.

The Trumpeter Swan.

Cygnus buccinator, *Richardson*.

White; head glossed above with chestnut: bill entirely black, with a tubercle: tail feathers 24: feet black.

Cygnus buccinator, *Rich.*, in *Northern Zoology*, ii. 464.

Obscure intimations of this singular bird appear to have been given by some of the North American travellers of the last century; but it was only distinctly characterised as a species by Dr. Richardson, in his account of the birds of Arctic America, where it chiefly breeds. Whether the excessive cold of its natural haunts would

preclude its propagation in Britain, has not yet been ascertained; since no living specimen, so far as we can learn, has yet been brought to England: the experiment, at all events, is worth trying; particularly as, from its being, according to Dr. Richardson, the most common swan in the interior of the fur countries, specimens might be procured with facility through the Hudson's Bay company.

This is probably one of the two sorts of swan which Lawson observes are found in Carolina; the largest of which he calls, from its note, the Trumpeter. Hearne also says,—"I have heard them, in serene evenings, after sunset, make a noise not very unlike that of a French-horn, but so entirely divested of every note that constituted melody, that I have often been sorry it did not forebode their death." Dr. Richardson is of opinion that the greater part of the swanskins annually imported by the Hudson's Bay company, belong to this species. It breeds as far south as lat. 61°, but principally within the arctic circle; and, in its migrations, generally precedes the geese a few days.

The trumpeter swan is about ten inches longer than the *Cygnus ferus:* its bill resembles that bird, also, in its general form; but it is rather more lengthened and depressed. The general colour of the plumage is white; the forehead alone being tinged with orange red: the bill, cere, and legs are entirely black; and the third primary quill is the longest. A fold of the windpipe enters a protuberance on the dorsal or interior side of the sternum, at its upper part, which is wanting in our two species of British swans, the *ferus* and *Bewickii;* in other respects, the windpipe is distributed through the sternum almost the same as in the latter of these birds. Dr. Richardson refers to a skin belonging to the Zoological Society, as having the crown and cheeks bright chestnut.

The Black Swan.

Cygnus atratus, *Meyer.*

Entirely black, with the bill red, and the legs flesh-coloured.

Anas plutonia, *Shaw, Nat. Mis.* pl. 103. Anas atrata, the Black Swan, *Lath. Synop of Birds, Supp.* 343. *Gen. Hist.* x. 234. *Phillips, Voy.* p. 96. *White's Voy.* p. 137.

The black swan is as characteristic of the Australian continent, as the white ones are of the northern hemisphere; and yet, in every thing but colour, the two species have a very close resemblance. The discovery of the black swan must have been almost as early as the discovery of the great south land which it inhabits; for it seems to be abundantly dispersed over all the rivers of Australia, so that our early navigators could not have failed to see it. Accordingly, we find that, about the year 1698, Dr. Lister, the most celebrated naturalist of that day, reports to the Royal Society, that "here is returned a ship, which by our East India company was sent to the south land, called Hollandia Nova, bringing the news that black swans, parrots, and many sea-cows were found there." And long before our circumnavigators had actually brought the spoils of these strange coloured birds to Europe, two of them had been imported alive to Batavia, by some of the Dutch vessels, where they were seen by the naturalist Valentyn; in whose curious book they are represented as swimming upon a lake, and one being caught by a sailor.

This species generally associates in small flocks of eight or twelve, on the sides and mouths of rivers, or in salt-water lagoons. Dr. White, who accompanied the first fleet of convicts to New South Wales, saw nine of them swimming together: but although the party fired upon them, all the birds flew towards the sea, which was very near, in the same order as wild

geese generally preserve; the one before the other.* Sometimes, however, they are seen in much greater numbers; for captain Bass counted upwards of 300 within a quarter of a mile, on a river near Port Dalrymple, in Bass Straights. It feeds chiefly on grass and aquatic plants; and its note has been compared to the creaking of a rusty sign on a windy day.

The size of the black swan is rather smaller than the tame one; and it has this peculiarity in its external structure,—that the tertials of the male, when in full plumage, are curved upwards, in the same manner as we see some of the ducks; the bill of this sex, also, is furnished with a prominent tubercle, which the other has not: in both, however, the colour is bright red above, but paler at the tip, and crossed towards the middle by a whitish band: the primary quills, and part of the secondaries, are pure white; but the rest of the plumage is of a deep glossy black, somewhat paler on the belly and thighs. We believe this species, now among the most common birds of our menageries, might be bred in this country without much difficulty.

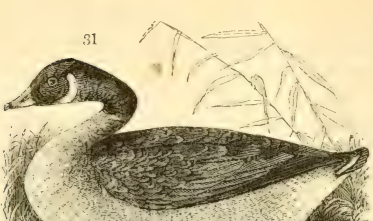
The Canada Goose.

Anser Canadensis, *Richardson.* (*Fig.* 31.)

Canada Goose, *Edwards*, pl. 151. *Pennant's Arctic Zool.* ii. 544. *Wilson*, viii. 53. pl. 67. f. 4. Anser Canadensis, *Bonap. Syn.* p. 377. *North. Zool.* ii. 468.

The bird whose natural history we shall now narrate, is not only the most common of the wild geese found in North America, but by far the most important; since, without the enormous supply of provisions which its innumerable flocks annually afford to the inhabitants of large provinces, thousands of families, in all probability, would be abridged of that food absolutely necessary for life. The history of such a bird is entitled to more than ordinary attention; but it can only be learned from

* Voy. p. 137.



those who have lived in the countries it inhabits. Fortunately, however, the respective accounts of Wilson and Richardson supply ample materials for this purpose; and these we shall now, with very little verbal alteration, lay before the reader. The narrative will be still further interesting, as the species has long been domesticated in this country, and may be seen in many private poultry-yards, and in almost every menagerie.

The regular periodical migrations of the Canadian goose to and from the arctic regions are the sure signals, as Wilson observes, of returning spring, or of approaching winter. The tracts of their vast journeys are not confined to the sea coast, or its vicinity. In their aërial voyages to and from the North, these winged pilgrims pass over the interior on both sides of the moun tains, so far west, that Wilson never visited any quarter of the country where he did not hear of them. The general opinion of the common people of the States is, that the geese, when flying northward, are going to the Canadian lakes to breed; but the people of that province are equally ignorant on this subject; and it was only until the more recent researches of Dr. Richardson, which will be subsequently detailed, that the supposition entertained by Wilson, of these birds extending their migrations "under the very pole itself," was proved to be erroneous. Hearne asserts that he saw them in large flocks within the arctic circle, still pursuing their way further north. But whether it was really this species,

or some other, may be fairly questioned, since Dr. Richardson states that they breed "between the 50th and 67th parallels."

So soon as the young are reared, and are sufficiently strong for the journey, these vast congregated flocks begin their migration southward. It is then that, like the quails of Egypt, they bring food and plenty to the poor inhabitants, and enable them to lay up a store of provisions for a considerable part of the year. The natives and English at Hudson's Bay, according to the information communicated by Mr. Hutchins to Pennant, depend greatly for support upon the geese; and in favourable years, three or four thousand birds, independent of those consumed fresh, are preserved in barrels, and kept for store provisions. Masters and servants, Indians and Europeans, all join in securing as plentiful a harvest as possible, by shooting and snaring the game. For the latter purpose they form huts, made of boughs, at musket-shot distance from each other, and place them in a line across the vast marshes of the country; each stand, or hut, being occupied by a single sportsman. These watch the flight of the birds, and imitate their cackle so well that the geese will answer, wheel about, and come near. Meantime the sportsman, on his knees, keeps motionless, with his gun cocked, but does not fire until he can see the eyes of the birds. One discharge is followed by that of another gun, kept ready for the purpose. He then proceeds to pick up the birds: these he sets upon sticks or otherwise, as if alive: but a more efficacious snare is, to have some well-stuffed specimens ready prepared for this purpose; and then the wild birds are again attracted, and more secured. In this way, if the day be fine and the birds plentiful, a single Indian will kill upwards of two hundred; for, besides being good shots, they are excellent mimics, and imitate the distinct notes of all these aquatic birds of game to great perfection. After such prodigious havoc as there appears to be made among these birds; and their running the gauntlet, as it were, for many hundreds of miles,

through such destructive fires; no wonder, says Wilson, they should have become more scarce, as well as shy, by the time they reach the shores and marshes of the United States.

The autumnal flight lasts from the middle of August to the middle of October: those which are taken in this season, when the frost begins, are preserved in their feathers, and left to be frozen, for the fresh provisions of the winter stock; the feathers being sent to England. Their first appearance coincides with the thawing of the swamps, when they are very lean. But their arrival from the south is impatiently looked for, as it is the harbinger of spring, and this period is called the Goose moon by the Indians. They appear usually at their (the Hudson's Bay?) settlements about St. George's day, O. S., and fly northward to nestle in security. Thus far is the substance of the account given by Mr. Hutchins, who, as an officer of the Hudson's Bay company, confined his information, no doubt, to what he had actually witnessed in that district.

The first arrival of the geese at New Jersey, according to Wilson, is early in October; and their first numerous appearance is the sure prognostic of severe weather.* Those which continue all winter, frequent the shallow bays and marsh islands, and feed on the roots and leaves of aquatic plants, which they tear up with their bills: but, at intervals of a few days, they regularly make an excursion to the inlets on the sea beach for gravel. They cross, indiscriminately, over land or water, generally taking the nearest course to their object. They swim well; and if wounded on the wing, dive and swim a great way under water, to the no small fatigue and perplexity of the sportsman. Except in very calm weather, they rarely sleep on the water, but roost all night in the marshes. When the shallow bays are frozen, they seek the mouths of inlets near the sea.

The flight of the Canadian goose is heavy and labo-

* The birds are then evidently returning southward, after their breeding, to avoid the excessive cold of the north, which must then be fast increasing.

rious, generally in a straight line, or in two lines united in front like the letter ≻. In both cases, the van is led by an old gander, who every now and then pipes his well-known *honk*, as if to ask how they come on; and the *honk* of "all 's well," is generally returned by some of the party. Their course is in a straight line, with the exception of the undulations of their flight. When bewildered in foggy weather, they appear to be sometimes in great distress, flying about in an irregular manner, and for a considerable time over the same quarter, making a great clamour. On these occasions, should they approach the earth, and alight to rest or refresh themselves, they are sure to assemble the whole neighbourhood in arms around them.

It is by no means a difficult matter to domesticate such birds as have been slightly wounded, and they readily pair with the "tame grey geese*:" the offspring are said to be larger than either; but the characteristic marks of the wild goose still predominate. The gunners on the sea-shore have long been in the practice of taming the wounded of both sexes; and have sometimes succeeded in getting them to pair and produce. The female always seeks out the most solitary place for her nest, not far from the water. On the approach of every spring, however, these birds exhibit symptoms of great uneasiness, frequently looking up in the air, and attempting to go off. Some, whose wings have been closely cut, have traversed on foot in a northern direction, and have been found at a distance of several miles from home. They hail every flock that passes over head; and the salute is sure to be returned by the voyagers, who are only prevented from alighting among them by the presence and habitations of man. The sportsmen generally take one or two of the domesticated geese with them to those parts of the marshes over which the wild ones fly, and conceal themselves within gunshot; which is no sooner perceived by the decoy geese, than they

* Wilson leaves us to conjecture of what species this "tame grey goose" really is.

begin calling aloud, until the whole flock approaches so near as to give them an opportunity to fire two and sometimes three loaded muskets among them, by which great havoc is made.

In reference to the extraordinary instinct of the wounded wild goose to join the migrating flocks in the spring, Wilson affirms, that instances have come to his knowledge, where, in birds but slightly injured, this has actually taken place ; the birds having perfectly succeeded in mounting into the higher regions of the air, and joining a passing flock which was on its way northward. Still more extraordinary is the fact, attested by several respectable eye-witnesses, of instances where these half-domesticated birds, after they performed their northern migrations, have actually returned to their former habitations. But we have already extended the limits of this article, however interesting, to such an unusual length, that we must advert to the subject on a future occasion.

According to Dr. Richardson, the arrival of this well-known bird in the fur countries is anxiously looked for, and hailed with great joy, by the natives of the woody and swampy districts, who depend principally upon it for subsistence during the summer. It makes its first appearance in flocks of twenty or thirty; and these are regularly decoyed within gunshot by the hunters, who set up stakes, and imitate their call. Two or three or more are so frequently killed at a single shot, that the usual price of a goose is a charge of ammunition. One goose, which, when fat, weighs about nine pounds, is the daily ration for one of the Hudson's Bay company's servants during the season, and is reckoned equivalent to two snow geese, or three ducks, or eight pounds of buffalo and moose meat, or two pounds of pemmican, or a pint of maize and four ounces of suet. About three weeks after their first appearance, the Canada geese disperse in pairs throughout the country, between the 50th and 67th parallels, to breed ; at which time they retire from the shores of Hudson's

Bay, and they are seldom or ever seen on the shores of the Arctic Sea. In July, after the young birds are hatched, the parents moult, and vast quantities are killed in the rivers and small lakes before they are able to fly. When chased by a canoe, and obliged to dive frequently, they soon become fatigued, and make for the shore with the intention of hiding themselves; but as they are not fleet, they fall an easy prey to their pursuers. In the autumn, they again assemble in flocks, on the shores of Hudson's Bay, for three weeks or a month previous to their departure southward. In these migrations, the geese are observed annually to resort to certain passes and resting places; some of which are frequented both in the spring and autumn, and others only in the spring.

A short description of this remarkable bird will alone be necessary. Length three feet. Bill black; irides dark hazel: the upper half of the neck is black, marked round the chin with a transverse band of white: the back and wing covers are brown, each feather being tipt with whitish; but the rump and tail are black: vent and tail covers white: the primary quills are black, and reach to the end of the tail: legs and feet greyish black. Both sexes are exactly alike.

The nest is generally built on the ground; but some occasionally breed in trees, depositing their eggs in the deserted nests of ravens and fishing eagles.

Hutchins Goose.

Anser Hutchinsonii, *Richardson.*

Bill black, less than an inch and a half in length: the throat with a white kidney-shaped patch: upper part of the neck black: the breast white.

Anser Hutchinsonii, *Rich. North. Zool.* ii. 47.

This new American goose, first discovered by Dr. Richardson, has not yet been added to our domesticated list; and we have some doubts, indeed, whether, from its marine habits, and its food consisting, as

Dr. Richardson says, of sea-weed, &c., it could be domesticated and bred like the Canadian goose, with which, until these few years, it has been confounded by all writers. According to Dr. Richardson, these geese are well known in Hudson's Bay, by the Cree Indian name of *Apistiskeesh;* and they are generally thought by the residents to be merely a small kind of the Canadian goose, as they have the white kidney-shaped patch on the throat which is thought peculiar to that species. Their habits, however, are dissimilar; the Canada goose frequenting the freshwater lakes and rivers of the interior, and feeding chiefly on herbage; while the present species is always found on the sea coast, feeding on the marine plants and the *molluscæ* which adhere to them, whence their flesh derives a strong fishy taste. In form, size, and general colour, this species, however, more nearly resembles the brent than the Canada goose: nevertheless, it differs from the former in having the white kidney-shaped patch on the throat and cheeks; in wanting the spotted white marks on the sides of the neck; in the black colour terminating four inches higher, instead of including the swell of the upper parts of the back and breast; and in the white of the vent being more extended. It is totally unlike *Anser leucopsis* in plumage, and has a longer bill.

The colour of the head, neck, rump, and tail is pitch black: back and both surfaces of the wings clove brown; the edges of the feathers yellowish grey, and worn. The white colour is distributed in the following way:—1. A speck before the eye: 2. The under eyelid: 3. A kidney-shaped patch on the throat, similar to that of the Canada goose, and which terminates acutely on each side of the hind head: 4. A band which passes over the upper tail covers, and forward by the sides of the rump: the breast, vent, and under tail covers are also white: the abdomen is yellowish grey, edged with white; and the flanks are transversely barred with bluish grey and white: the bill and feet are black.

The Snow Goose.

Anser Hyperboreus, *Pallas.*

Plumage of the adult bird, pure white, with a red bill and bluish tip: orbits and feet red: fore part of the head fulvous.

Adult. — Anser Hyperboreus, *Pallas, Spec. Zool.* vi. 26. *North. Zool.* ii. Anas Hyperborea, *Wilson*, pl. 68. f. 5., male. *Temminch, Man.* ii. 816. Snow Goose, *Pennant, Arct. Zool.* ii. 479. *Wilson*, viii. 76. Oie Hyperborée, ou de Niège, *Temm. Man.* ii. 816.

Young. — Anas cærulescens, *Linn. Syst. Nat. ed. Gmelin*, i. 513. *Latham, Index Orn.* ii. 836. Blue-winged Goose, *Edwards*, pl. 152. *Pennant, Arct. Zool.* ii. 474. *Latham, Gen. Syn.* vi. 469. *Gen. Hist.* x. 232. Young of the Snow Goose, *Wilson*, pl. 59. f. 5.

Although this goose extends its range into the northern countries of Europe, it seems much more common in Arctic America. M. Temminck and others mention it as one of the regular migrators into the eastern parts of Europe; although it is but an occasional visiter in Prussia and Austria, and has never been found in Holland. Wilson says that the Americans call it the red goose, probably from the colour of its bill and feet. It seems to leave its breeding places in the arctic regions of North America in September, and arrives in the River Delaware, sometimes in considerable flocks, early in November: they are then very noisy, for their notes are shriller and more squeaking than those of the Canadian species. On their first arrival they make but a short stay, proceeding further to the south as the depth of winter approaches; but from the middle of February until the ice breaks up in March, they are often abundant on the shores of the Delaware, where they feed upon the roots of the reeds, which they tear up from the marshes like hogs. Latham, who derived his information from that little known, but far better ornithologist, Mr. Hutchins, says that this species is very numerous in Hudson's Bay; that they visit Severn River in May,

and, after remaining a fortnight, proceed further north to their breeding places; which, as subsequently ascertained by Dr. Richardson, are the barren grounds of the arctic region: the birds return to Severn River the beginning of September; and after staying about a month, depart for the south, attended by their young, in innumerable flocks.

Some very interesting remarks by Dr. Richardson, alike applicable to this and the two other species of geese of North America, are so appropriate to our present purpose, that we shall here introduce them. The arrival of the different species of geese in the fur countries, marks the return of spring, and diffuses as much joy among the wandering hunters of the arctic regions, as the harvest or vintage excites in more genial climes. It is an event of great importance to the natives, as it affords them a supply of food at a season when the moose and deer hunting is impeded by the floods of melted snow. The larger species of *Anas*, or the geese, are chiefly attended to; and they are observed to follow determinate routes in their progress northward, and to halt regularly at certain stations. Their return in autumn is also by passes well known to the natives; but not always in the same line with their summer movements. Actuated, in the beginning of the season, by an impulse which hurries them to the breeding stations, they remain at their resting places only long enough to admit of the country to the northward being properly thawed for their reception; but during these rests, which are seldom prolonged beyond eight or ten days, they become very fat, although on their first arrival they are always lean. Their movements to the northward are sometimes premature; and after having left a station, they occasionally return to it for a few days: such an event is always followed by cold frosty weather, or severe snow storms. When they return in autumn, their migrations being more exclusively regulated by the supplies of food they can obtain, their halt in the marshy districts, through which the Saskatchewan

and its continuation, Nelson's River, flow, and on the low shores of the southern parts of Hudson's Bay, is more considerable, and is terminated by the freezing of the marshes. This period forms the principal goose-hunt of the Cree Indians, who are the only natives who frequent these swampy districts. In the barren grounds, on the other hand, frequented by the northern Indians, or Chepewyans, the spring goose-hunt is the most productive.

The only geese seen in any great numbers in the interior of the country, are the Canada goose (*Anser Canadensis*), the laughing goose (*Anser albifrons*), and the snow goose (*Anser Hyperboreus*). The different notes of these three species are well imitated by the Indians; who thus are very successful, during the spring migration, in bringing them within gunshot. In the autumn, the geese do not so readily answer the call; and it is necessary that the sportsman should conceal himself, and use some dead birds as a decoy.

Dr. Richardson further observes, that this species breeds in great numbers in those dreary tracts of Arctic America, called the Barren Grounds. The eggs are of a yellowish white colour, and of a regularly oval form, about three inches long, and two broad. The young are able to fly about the end of August; and, about two or three weeks afterwards, the parent birds and their broods migrate to the south. It is supposed that the young do not attain their full or adult plumage until the fourth year, and before which they appear to keep in distinct flocks by themselves: such flocks are numerous at Albany Fort, in the southern part of Hudson's Bay, where the old birds are rarely seen; while, on the other hand, the old birds visit York Factory, during their migration, in great abundance, but are seldom accompanied by the younger birds. Their food is rushes and insects; and in the autumn they devour berries.

All writers, before Wilson, had described the young of this species as perfectly distinct, under the name of the Blue-winged Goose, accurately figured by Edwards,

as already quoted. There seems some difference of opinion, as to whether the young birds keep in flocks by themselves, or whether they accompany their parents: the former is stated to be the case by Dr. Richardson; the latter, which seems the most natural, is affirmed by Wilson, in the following passage: — "The snow geese pass along our coasts, and settle in our rivers every autumn."

In a flock of thirty or forty, there are seldom more than six or eight pure white: the rest vary so much, that no two are exactly alike; yet all bear the most evident marks, in the particular structure of their bills, of being the same identical species. The following description is applicable to the generality of the young birds; the greater or less degree of white upon the plumage indicating the progress it has made towards assuming the dress of the adult. The whole of the head, and half of the neck, white; the rest of the neck, breast, and back purplish brown, darkest where it joins the white; all the feathers being finely tipt with pale brown: wing covers light cinereous, or grey; the quills black; the tertials being edged with cinereous or light blue, but black in the middle: rump like the wing covers: tail covers white: tail blackish, edged and broadly tipt with white: belly and vent white, mixed with cinereous: feet and bill light reddish purple or pale lake; the latter having the tips light blue.

The adult bird, as described by Wilson, is two feet eight inches long: the bill being three inches, remarkably thick at the base, high on the forehead, but small and compressed at the extremity, the nail or thickened tip being whitish; the colour of the rest of the bill is purplish carmine; the edges of the two mandibles separate from each other for their whole length, and this gibbosity is occupied by dentated rows resembling teeth; these, and the parts adjoining, being of a blackish colour. The whole plumage is of a snowy whiteness, except the fore part of the head, which is of a yellowish rust colour; and the nine exterior quill feathers, which are black, shafted with white, and white at the root:

legs and feet like the bill: irides dark hazel. Tail rounded, of nineteen feathers, and of nearly the same length as the wings.

The Loggerhead Goose.

Anas trachyptera, *Latham.*

Loggerhead Duck, *Lath. Synop. of Birds,* vi. 439. *Gen. Hist.* x. 226.

One of the principal considerations that have guided our present selection of birds, is that of calling the attention of our readers to those imperfectly known species, which seem to possess the properties of domestication; with the hope of inducing such persons, as have the power, to clear up their history, and to attempt, where practicable, the importation of living specimens into this country. Our accounts of such species will, of necessity, be taken from those authors who have thus imperfectly mentioned them. But as this volume will, in all probability, from its wide circulation, fall into the hands of many of our countrymen now residing in or visiting the countries where these species are said to occur, we think much eventual good will result from this plan. Amateurs are frequently anxious to do something for Natural History, if they knew *what* to do; and, if they had a friend who would guide their inquiries to a useful end, exertions would often be made, and much valuable information procured. Under this impression, we shall here introduce the accounts of several little-known species of the *Anatinæ* family, chiefly, as it is said, inhabitants of South America, where so many of our countrymen are now residing; and from whom the Ornithological Society may hope to receive either preserved skins, for determining the species more correctly, or living specimens for adding to their menagerie.

The first we shall notice is a most singular bird, called by Dr. Latham, in one of his works, a *Duck;* but in his last, a *Goose,* without any assigned reason for the

change. He says*, without mentioning, as he usually does, his authority, that it "inhabits Falkland Islands, and Staten Land, where it is seen in pairs, though sometimes in large flocks. From the shortness of its wings, this bird is unable to fly (?); but it makes considerable use of them when in the water, on which it seems, as it were, to run; at least, it swims, with the assistance of the wings used as oars, at an incredible rate, so that in such situations it becomes extremely difficult to shoot these birds. To remedy this, the sailors used to surround a flock with boats, and drive them ashore; where, unable to raise themselves from the ground, they ran very fast: but soon growing tired, and squatting down to rest, they were easily overtaken and knocked down with sticks. The flesh was sometimes eaten by the sailors, in defect of that of the bustard goose; but was not much relished, being rank and fishy; it was thought, in fact, more proper for the hogs, which, after it had been boiled in the copper, ate it up greedily, and fattened well (upon it)."

Such is the strange account which the doctor gives of its manners; and we shall now transcribe what he says of its plumage; observing, by the way, that no figure of it has yet been published.

"Length thirty-two inches: weight from twenty to thirty pounds. Bill three inches long; colour orange; the top of the upper mandible brown at the base, and black at the tip: irides orange, surrounded with black, and again with orange: head and neck deep ash-colour; upper part of the body much the same: the edge of the secondary quills white, forming a band of the same on the wing: under parts of the body dusky down the middle; over the thighs cinereous blue: vent white: quills and tail black; the last short, and pointed in shape; the wings are likewise very short, not reaching to the rump; on the bend of the wing a double yellow knob, half an inch in length: legs brownish orange: webs dusky: claws black."

* Gen. Hist. of Birds, x. 226. Can this be some species of penguin with a broad bill?

The Hybrid Goose.

Anas hybrida, *Latham.*

Plumage, white in the male, black in the female (?): bill and legs either red or yellow.

Anas hybrida, *Latham, Gen. Synop. 2d Supp. 345. Mollin. Chili*, 383.

This goose is stated to "inhabit the Archipelago of Chiloë in South America, and may be called monogamous, as the male and female are never found apart; not uniting in flocks as the other sorts: during the time of incubation they retire to the rivers, where the female generally lays about eight white eggs, in a hole formed out of the sand." Its description is stated as follows: — "Size of the domestic goose; but the neck somewhat shorter, and the wings and tail longer. The male has the plumage of a pure white throughout, with the bill and legs yellow; the bill is semicylindrical, with a red cere: the female is black, with some streaks of white, arising from the tips of several of the feathers being bordered with white: the bill and legs red: the legs nearly the same as in the common goose." Why this should be called *hybrida*,—a name which no *species* can bear with the least regard to sense,— does not appear.

The Chilian Goose.

Anas Coscaroba, *Latham.*

Entirely white: bill and legs red.

Coscaroba Goose, *Lath. Synop. of Birds, 2d Supp. 345. Gen. Hist.* x. 228.

If this goose, as Dr. Latham states on the presumed authority of Mollini, is a native of Chili, its acquisition by some of our countrymen there would be a matter of no great difficulty; since the doctor goes on to say that it is valuable for its extreme docility and tameness in confinement, and particularly by attaching itself to the

person who supplies it with food. Mollini states it to be of a large size; with the bill and legs red, the eyes of a fine black, and the plumage entirely white. Nothing is said of the female. No figure exists; nor does this bird appear to be known to any of the ornithologists of Europe.

The Southern Goose.

Anas Antarctica, *Latham.*

Body blackish, crossed by transverse white lines, slender on the head and neck, and broader beneath: wing covers white; speculum green, edged with white.

Antarctic Goose, *Lath. Synop. of Birds*, vi. 442. *Gen. Hist.* x. 228.

This is another of the obscure geese of the southern hemisphere, said to inhabit Christmas Sound in Terra del Fuego, and is thus described by Latham: —

"Smaller than a tame goose; weight sixteen (?) pounds. Bill narrow, short, and black: the whole plumage of a dazzling snowy whiteness. The female has a reddish flesh-coloured bill: the head, neck, and body black, crossed with transverse white lines; those of the head and neck very minute, but grow broader as they proceed downwards: the middle of the back plain black; wing covers white: on the bend of the wing, a blunt knob; speculum green, edged outwardly with blue: legs yellow."

This must be a particularly beautiful bird; and, from its inhabiting the colder regions of America, might probably be acclimated in this country without much difficulty.

The Bustard Goose.

Anas leucoptera, *Lath. Syn. of Birds*, vi. 440. *Gen. Hist.* x. 229.

As Brown, in his *Illustrations* above cited, is the only author as yet who appears to have figured this

little-known goose, which he says inhabits the Falkland Islands, we shall place his description before that of Dr. Latham, which will be subsequently noticed. Brown states the length of his bird to be three feet four inches. The bill is small and dusky: the head, neck, and all the under parts of the body are of a snowy whiteness: the upper part of the back is barred with black and white: the wing covers are white; the secondaries marked with a dusky broad band, and another of white: the speculum is green; and the primaries are dusky: the middle feathers of the tail are glossed with green; the others are white: legs black.

Dr. Latham makes the above bird identical with the bustard goose, of which he gives the following different description: — Length, from thirty to forty inches. Bill scarcely two inches long, and black: head, neck, lesser wing covers, and under parts of the body white: lower part of the neck behind, and as far as the middle of the back, crossed by numerous dusky black lines; sides, over the thighs, the same: the greater wing covers black, tipt with white, forming a bar of white on the wing; at the bend a blunt knob: second quills, part black, part white; prime ones dusky black: speculum dark green: the two middle tail feathers black; the others white.

This latter goose, the doctor observes, "stands pretty high on its legs, which serve to elevate it above the tall grass; and with the addition of its long neck, it is able to observe any danger approaching. It walks and flies with great ease, and has not that disagreeable cackling cry peculiar to the rest of its kind. It generally lays six eggs. The flesh was considered agreeable."

The Cream-coloured Goose.

We insert the following short and unsatisfactory notice of this goose, if such it be, in the precise words of Dr. Latham, in his *General History of Birds* (x. 296.), with a view to call the attention of our Austra-

lian brethren to it, in the hopes that we may hereafter be able to determine what it really is.

"Size of a common goose. Bill very stout, deep red, with a black tip: plumage in general whitish dun, or cream-colour: across the shoulders two or three rows of transverse dusky blotches, and a few of the same on the wing covers: ends of the quills chocolate: tail black: legs moderate in size, and red. Inhabits New South Wales."

The Pigeon Goose.

Cereopsis Australis, *Sw.* (*Fig.* 32.)

Cinereous grey: wing covers and lesser quills tipt with dark roundish spots.

Cereopsis Novæ Hollandiæ, *Latham*, *Ind. Ornith. Supp.* lxvii. *Auct.* Cereopsis, *Bennett*, in *Zool. Gard.* ii. 315. Anser griseus, *Vieillot.* Cereopsis cendre, *Temm. Pl. Col.* 206. New Holland Cereopsis, *Lath. Gen. Syn.* ii. 325.



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The pigeon goose (so called from the similarity of its colouring, no less than its direct analogy to those birds) remained for many years so little known to ornithologists, that only three preserved specimens were ascertained to exist in the European museums. One of these, mutilated, was, no doubt, the cause of considerable error to Dr. Latham, when he first separated this bird as the type of his genus *Cereopsis;* a name, however, which, from not being founded in fact, but tending to give a

false idea of its structure, is so objectionable, that we trust some of our higher ornithologists will propose a better.

Within these few years, however, the *Cereopsis* has become not only a living inhabitant of our menageries, but a perfectly naturalised species. The late Mr. Bennett, who has very ably and ingeniously drawn up a complete history of the bird, mentions that the Zoological Society, in the year 1831, possessed no less than eight living specimens; some of which belonged to George IV.'s menagerie at Windsor, "where they bred as freely as the emus" and several other Australian animals; having all descended from one pair originally brought to this country. They are perfectly tame, and in their manners resemble geese, but show more disposition to become familiar.

Its manners in a state of nature may be gathered from the various accounts of voyagers; for Mr. Bennett has clearly shown that this bird has been indirectly mentioned in their narratives for upwards of thirty years. From the notes of captain Flinders, it appears to be partially migratory. Labullardière tells us, that many of those first seen by his crew, suffered themselves to be taken by the hand; but the rest became alarmed and took to flight. Considerable numbers were taken by captain Flinders's crew, both at Lucky Bay and Goose Island, by knocking them down with sticks; some being secured alive. According to M. Bailly, who met with them at Preservation Island, the pigeon geese were so abundant, and so tame, that his crew procured sufficient to subsist upon during their stay there. All agree in extolling the delicacy of its flesh.* It seems to confine itself to the coast, and to feed chiefly upon grass; and rarely takes to the water: its usual weight is from seven to ten pounds. According to captain Bass, it has "a deep, hoarse, clanging, and though a short, yet an inflexed voice;" a description which Mr. Bennett says is very accurate. With such a desirable bird for domes-

* Bennett, loc. cit.

tication as the Australian farmers possess in the pigeon goose, which seems to be altogether much tamer than ours, it is really surprising they have neglected its propagation: yet such seems to be the fact; for although Mrs. Lewin, who had resided in Australia many years, informed Dr. Latham, that, "with little management, it becomes very tame and familiar, so as to be domesticated with our common goose," its cultivation seems to be so far abandoned, that the bird is spoken of by naturalists who subsequently visited the colony, as very rare; they having only seen a single specimen in the governor's garden.

We shall now give Mr. Bennett's description of the plumage, as it was no doubt taken from the living specimens before alluded to. The pigeon goose "is about the size of the common goose, which it resembles in its form, excepting the comparative length of the bill and legs. A broad patch on the top of the head is of a dull white; and the rest of the plumage of a dingy grey, deeper on the upper than on the under parts; having the extremity of each of the feathers of the back margined with a lighter band; and most of the wing covers, and secondary quill feathers marked with rounded dusky spots of from two to four lines in diameter: on the feathers of the back and shoulders the spots are much larger, assume an angular or semilunar form, and approach more nearly the general colour of the plumage: the quill feathers, both of the wings and tail, are dusky black throughout the greater part of their extent: the naked extremity of the bill is black; but the broadly expanded cere of a light straw or lemon colour; and the irides are light hazel: the naked parts of the legs are reddish orange; but the toes, claws, and webs are black; this colour being continued in a stripe a little way in front of the leg.

The ornithologist cannot fail to recognise, in the more scientific characters of this remarkable bird, given elsewhere*, the many extraordinary analogies it presents,

* Class. of Birds, ii. 191. 366.

in all parts of its structure and colours, to the tenuirostral type of the class Avis; for such do we consider is the station it occupies in its own circle. It is the most aberrant of all the geese, and consequently has the toes but slightly webbed, the legs are unusually long, and it seldom takes to the water; thus representing the *grallatorial* waders. Like the pigeons, again, it has the base of the bill excessively swollen, as if tumid; while its grey colour and spotted wing covers make it almost a counterpart of some of the little ground doves of America; all these being representatives of one and the same type—namely, the tenuirostral.

The Semipalmated Goose.

Dendrocygna semipalmata, *Sw.*

Head, neck, wings, and middle of the back deep brown; the rest of the plumage white: bill brown: legs red.

Anas semipalmata, *Lath. Ind. Orn. Supp.* lxix. Semipalmated Goose, *Gen. Syn.* ii. 347. pl. 139. *Gen. Hist.* x. 295. pl. 178. (a repetition of the former plate).

Whether this is a goose, or a duck, is altogether uncertain; but its singular conformation, no less than its being an inhabitant of rivers, renders it a most desirable acquisition to our living collections of this family. We therefore here introduce it, for the purpose of calling the attention of our settlers in New South Wales to the interest which attaches to the species. Dr. Latham, hitherto its only describer, gives the following imperfect account:—

"This is nearly the size of the wild goose. Bill brown; the cere at the base passing on each side to the eye: irides bluish: head, neck, and thighs brownish black; round the lower part of the neck white, extending to the beginning of the back, and all beneath: the rump is also white: the rest of the back, and wings, deep brown; quills and tail darker, approaching

to black: legs red; toes webbed only for about half way from the base. In some birds, the white surrounds the neck as a collar; in others, it extends between the shoulders to the back.

"Inhabits New Holland: found in flocks near Hawksbury river, and called New South Wales goose: its note said to be tuneful and melodious; and is sometimes observed to perch in trees, in the manner of the whistling duck. The native name is *Newal Gang.*"

The trachea of this species, independent of its length, is singularly situated; for, after passing down on the fore part of the neck in the usual way, it makes several folds on the outside of the breast, under the skin, before it enters the cavity. Dr. Latham, however, seems never to have seen the bird itself; for he expresses his thanks to Mr. Lambert for the figure which is engraved on his 178th plate; and he intimates as much in regard to the trachea, which he also figures. But the truth is, the doctor's style of writing is so vague, and at times so careless and ungrammatical, that we are perpetually at a loss to understand the meaning he intends to convey.

The Red-billed Whistling Duck.

Dendrocygna erythroryncha, *Sw.*

Chestnut rufous: crown, body beneath, quills, and tail black; shoulder covers bright orange; greater and lesser covers white: bill red: cheeks light ash.

Anas Autumnalis *Linn.*, *Auct.* Siffleur à bec rouge, *Buff. Pl. Enl.* 826. Red-billed Whistling Duck, *Edwards*, pl. 194. *Gen. Syn.* vi. 498.

Our menageries, so far as we can learn, are still without this very interesting and, to us, rare species; for although it would appear to be well known in the West Indies, and to be very common in New Grenada, on the opposite part of the American continent, it is so rare, even in museums, that we have not yet been able to examine it. Edwards has figured it on his 194th

plate; and as his descriptions are always remarkably exact, we shall here abridge what he says respecting it. His specimen was alive, and had been brought from the West Indies "by the name of the Whistling Duck." In the *General Synopsis* it is stated, but without the authority being quoted, that "it is very common at New Grenada, and *frequently kept tame* in the farm-yards between the tropics; but it is apt to be quarrelsome, and will often fly away. The Spaniards call it *Pisesic*, from its voice; it is known to the English by the name of Spanish main duck, is now and then seen alive in our menageries in England, and is said to have propagated in an aviary at Schönbrun in Sweden."

Edwards's account may be thus abridged:—Size of the common tame duck, but the length of its legs makes it much higher. Bill bright red, yellowish round the nostrils, and black at the point: iris dark hazel: sides of the head and chin light ash; crown and nape black: the neck, breast, and back are of a dull red or brick colour, light on the breast, and darkest above; spurious wings and primaries black; tertials dark brick-coloured red: the greater and lesser wing covers are white, so as to form a large white spot on the middle of the wing: the shoulder covers, however, are bright orange colour; above which, and round the outer margin of the wing, the feathers are black; this colour being continued to the spurious quills: the whole body and thighs are black; but where the red on the breast and the black on the belly unite, these blended colours form a dusky ash: the under tail covers are whitish, with small black marks tending the lengthway of the feathers: the tail is black, and a little pointed; the rump and upper tail covers are black. The legs are bare of feathers a little above the knees: the toes are webbed as in other ducks, the inner toes having lateral webs on their insides: legs and feet flesh-colour; the claws black.

We are strongly disposed to join in the conjecture of Edwards, that this bird is the female of his black-billed whistling duck, which systematists have always kept

distinct under the name of *Anas arborea*, and of which the following account is given by Latham, probably from the living specimen he subsequently mentions: — "Less than a mallard. Bill black: irides hazel: crown of the head dusky, somewhat crested at the back part, and rufous brown: neck long and slender; hind part of it brown; back and scapulars the same, but the margins of the feathers rufous: sides of the head and throat white: fore part of the neck white; breast pale rufous; both the latter spotted with black: belly, thighs, and vent like the neck; but the spots are smaller, and most numerous on the sides: wing covers rufous, spotted with black: rump, and upper tail covers, dark brown, edged with rufous; quills and tail dusky: legs longer than in the common duck, and lead-colour: claws black.

"Inhabits Jamaica, where it is remarked for making a whistling kind of noise, and is said to build in trees: in some seasons migrates into Guinea, and other neighbouring parts, and is valued for food. I once received," continues the doctor, "a living specimen from Jamaica, and kept it in my garden; but it was in the highest degree wild, and even ferocious; it would by no means become familiar, and rarely would take any food while any one was near to observe it." *

We are induced to suspect that the last described bird is a female, chiefly on account of its plumage. It rarely happens, either in the subfamily of *Anserinæ*, or in that of *Anatinæ*, (the first comprehending the geese, the latter the ducks,) that the males have not a distinct and decided tone of colouring on their plumage, not broken into spots of uniformly plain colours, as we see in female birds, and in the supposed *Anas arborea* of authors. Whether this bird, however, be the female of the red-billed species, or of some other, must be still a question. With so many of our countrymen in the regions where these birds are found, we really hope some further information may be sent of them to the Ornithological Society.

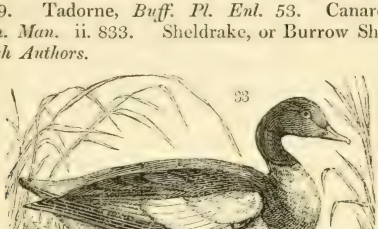
* Gen. Hist. of Birds, x. 298.

The Common Sheldrake.

Tadorna Bellonii, *Leach.* (*Fig.* 33.)

Head and neck greenish black: pectoral band, and under tail covers, rufous: vent and abdominal band black: bill red: legs flesh-colour.—*The male.*

Anas Tadorna, *Linn.*, *Auct.* Tadorna Bellonii, *Leach*, *Gen. Zool.* xii. 2. 72. Tadorna Vulpanser, *Selby*, *Ill. of Brit. Orn.* ii. 289. Tadorne, *Buff. Pl. Enl.* 53. Canard tadorne, *Temm. Man.* ii. 833. Sheldrake, or Burrow Sheldrake, *of British Authors.*



The sheldrake, one of the most elegant of our native ducks, deserves to be added to our list of tameable species; for although, in a state of nature, it is rarely seen on the fresh waters of this country, it is well known, as Mr. Selby says, to thrive very well when confined to fresh-water ponds. Indeed, it is so much prized and sought after for that purpose, that the inhabitants of the coast are in the practice of watching the old birds to their nests during the breeding season, and digging up the eggs. These are placed under a hen or tame duck; but great care and attention are requisite in rearing the young; and it is seldom that above three or four survive from a hatching of a dozen eggs. The young soon become tolerably tame, and answer to the call of the person who feeds them: when fully fledged, however, being very active birds, they are apt to stray away; and if left with their pinions unmutilated, generally, in time, fly entirely off; although they sometimes return after an

absence of many months.* They rarely breed in confinement; but Mr. Selby has known one instance, and Montagu mentions another, in which the birds, after the lapse of some years, and having the range of an extensive piece of water, produced a brood of nine. The eggs are of an oval form, both ends equally rounded; and are either of a pure white, or with a very faint tinge of green: they are usually hatched in thirty days.

The sheldrake enjoys a wide geographic range, being found in all the temperate and northern parts of Europe: it even extends to Iceland; but is there said to be only a summer visiter: with us it remains during the whole year, and does not, like so many others of its family, quit its native haunts; nor do they change their mates at the breeding season. Naturally, the sheldrake is a marine duck; and Mr. Selby observes that it is very common upon such parts of the Northumbrian coast as abound in sand hills; the numbers being often considerably increased by flocks which pass to and from the more northerly parts of Europe: they delight in such sandy tracts as abound in rabbit burrows — breeding in such as have been deserted; in these the females build their nests of dried grass and fine down, often ten or twelve feet from the entrance of the aperture. Their natural food consists of small marine animals and sea weeds, but when domesticated, or in captivity, they thrive very well upon grain, and the usual food of ordinary ducks.

The sheldrake is nearly two feet in length. The whole of the bill is of a rich blood red: the irides are brown; and the feet flesh-coloured: head, and half of the neck, dull green; the lower part being white: the wing covers, the back, the sides, the rump, and the base of the tail are also pure white: the scapulars, the quills, the vent, and the tips of the tail are deep black; and there is a broad band on the middle of the belly of the same colour: on the breast is another broad band of rufous red, which reaches to the interscapulars: the under tail

* Selby, Illust. of Brit. Orn. ii. 291.

covers are also rufous: the speculum or mirror on the wings is green, glossed with purple.

The female is rather smaller; and has merely a small whitish spot at the base of the bill, in lieu of the fleshy protuberance possessed by the male: the band on the breast is not so broad; and the black one on the belly is very straight, and is often variegated with irregular whitish spots. The trachea of the male differs from that of any European duck: it is furnished with a labyrinth composed of two roundish bladders of a most delicate texture, one of which is larger than the other; both are uneven on the surface, and of so tender a fabric as scarcely to bear the pressure of the finger without fracture.

The Musk Duck.

Tadorna moschata, *Sw.*

Black, irregularly varied with white: bill with the base and tip blue, and the middle red: skin round the eye naked, red, and tuberculated.

Anas moschata, *Linnæus, Auct.* Anas sylvestris Braziliensis, *Ray, Synop.* 148. 1. Le Canard musque, *Buffon, Pl. Enl.* 989. Le gran Canard, *Azara, Voy. ed. Sonnini*, iv. No. 427. p. 327. Muscovy Duck, *Lath. Synop.* vi. 476. *Gen. Hist.* x. 268.

This singular species has long been a domesticated tenant of our farm and poultry yards; although of late years it is by no means so commonly seen as formerly. It was well known to Willughby and Ray, — the fathers of systematic ornithology, at least in this country, — as a native of South America; but, by a singular fatality, nearly all the writers who succeeded, got an idea that it came originally from Russia; and hence the vulgar and erroneous name of Muscovy duck. Such mistakes among the writers of the last century were naturally to be expected; but when we find, in the latest of our compiled systems, that this tropical American bird "is said to be in a wild state about the Lake Baikal in

Asia," we are led to distrust, and justly, all the other localities that are mentioned by the writer.

Little or nothing worth repeating was known of the habits of the musk duck, until the appearance of the admirable work by Azara, on the animals of Paraguay. We are there informed, that it generally is found solitary, or in pairs, but sometimes in flocks of from twenty to thirty, although it never migrates. It feeds not only on what it finds (*des productions*) in the rivers and stagnant waters, but, according to the general opinion, on the roots of the manioc *, on maize, and other vegetables, which it searches for during moonlight nights. Although generally on the ground during the day, it always roosts upon trees. It is very shy, except at such times — generally at the break of day — as it feeds, when it may be approached more readily. It begins to lay in the beginning of September; and generally deposits ten or more eggs in the hollow of a tree, somewhat elevated from the ground, or sometimes in a fork of its branches; the nest, in this latter case, being lined with the bird's own feathers. When hatched, the mother conveys the young to the nearest water, by carrying them, one by one, in her bill. Its note is low and guttural, not unlike the syllable *ha*. It is the largest species found in Paraguay, and is called Ypeguaza by the Indians, and *Pato reale o grande* (Grand or Royal Duck) by the Spaniards.

The musk duck, in its naturally wild state, according to Azara, has the whole of the plumage entirely black, varied with green and violet reflections: some individuals, however, have a few white dots on the hinder part of the head, and on all the wing covers: the feet are black; the irides yellow: the bill is black, with a transverse band of cærulean blue close to the nostrils, and a spot of the same at its tip; between these is another

* I am inclined to doubt this fact very strongly: the root of this plant, before the juices are artificially expressed, is a deadly poison, both to man and beast. It is even a well-known fact, in Brazil, that if fowls or poultry sip up the juice that runs from the pressing mill, they are sure to die. This, indeed, I have witnessed.

of red. The male measures 34 inches, but the female only 26½. The great peculiarity of the species is in the naked warty skin surrounding the eye, which is of a rich red, which exists in both sexes, but is more conspicuous in the female.

In a domesticated state, the sides of the head, throat, and fore part of the neck are white, varied with black, and having more or less white on all the under plumage: the three first quills are also white; the nine following dusky brown, edged without, and tipt with green gold: tail green gold; the two outer feathers white.

It is said that the musk will pair with the common duck, and produce a cross breed; but we have a particular aversion to such mongrel things, which, where no object of utility is gained, we look upon as the deformities, rather than as exhibiting the beauties, of nature. The flesh of the musk duck is highly flavoured; and, from the size of the bird, it certainly is a species well worthy of being more extensively propagated than it is at present; the singularity, also, of its tuberculated face would render it a curious, if not an elegant, companion among the more attractive ducks of our aquatic preserves. It may here be mentioned, that its specific name is derived from the whole bird possessing a slight odour of musk,—a circumstance we have observed by no means uncommon in those Brazilian woodpeckers constituting the typical species of the genus *Malacolaphus*.

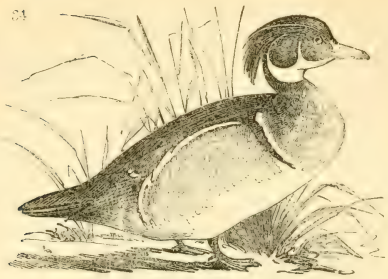
The Summer or Tree Duck.

Dendronessa sponsa, *Swains.* (*Fig.* 34.)

Crest procumbent, varied with green, blue, and white.

Anas sponsa, *Gmelin, Syst. Nat.* i. 539. *Latham, Ind. Orn.* ii. 871. Dendronessa sponsa, *Sw. Northern Zool.* ii. 446. Canard huppé, *Buffon, Pl. Enl.* 980, 981. Summer Duck, *Catesby's Carolina*, i. pl. 97. *Edwards*, pl. 101. *Wilson*, viii. pl. 60. f. 3. *Franklin's Journ.* p. 702.

The exquisite beauty of this duck is only surpassed by that of the *Dendronessa galericulata*, commonly, but



very improperly, called the Chinese *Teal;* and these two form the only examples yet discovered of the rasorial type of the river ducks. Possessing this analogy, we consequently find they are more easily tamed than most others; and hence they have been long known as the most elegant of those swimmers which thrive in our menageries.

The summer duck is strictly confined to the New World, where it represents that species which is equally peculiar to the temperate regions of Asia. Its southern range appears not to extend beyond Mexico; while Dr. Richardson met with it so far north as lat. 54°, in the month of June. It does not appear, however, to be one of those which invariably migrate northerly, for Wilson says that many are occasionally seen during the whole of the winter in those states that lie south of the Potowmac. It is called the wood or tree duck, from its breeding in hollow trees; and the summer duck, from remaining in the warmer provinces during the whole of summer. It seems to be almost an exclusive inhabitant of fresh waters, as it rarely visits the shores of the salt marshes: its favourite haunts are the solitary, deep, and muddy creeks, ponds, and mill-dams of the interior. Its nest is frequently made in old hollow trees overhanging the water; but instances have been known where the nest was constructed of a few sticks laid in a fork of the branches. Wilson mentions an instance of a nest built

in an old white oak on the banks of a stream, whose top had been torn off by a storm. In this hollow and broken top, about six feet down, on the soft decayed wood, lay thirteen eggs, snugly covered with down. This tree had been occupied, as there was reason to suppose, by the same pair, for four successive years. A person who had lived near the spot, said that he had seen the female, the preceding spring, carry down thirteen young, one by one, in less than ten minutes: she caught them in her bill by the wing or back of the neck, and landed them safely at the foot of the tree, whence she afterwards led them to the water. The male usually perched upon an adjoining branch, where he kept watch while the female was laying, and often while she was sitting. A tame goose had chosen a hollow space at the foot of the same tree, to lay and hatch her young in.

The summer duck seldom associates in flocks of more than three or four, and they are all probably of the same family. The common note of the drake is *peet, peet;* but when, standing sentinel, he sees danger, he makes a noise not unlike the crowing of a young cock, *oe eek, oe eek.* Their chief food seems to be acorns, wild oats, and insects. So very tame does this elegant bird become when domesticated, that it will permit one to stroke its back with the hand. Some time ago, an American gentleman, who had a remarkable fondness for this species, had a whole yard swarming with them; they had been so completely domesticated, that they bred, and were as familiar as any other poultry. They are well known in this country among the dealers in live birds; and may generally be procured, although at a somewhat high price. It is much smaller than the common domestic duck.

The colour of the male may be thus described: —Upper part of the head and lores glossy dark green; cheeks, and a large patch on the sides of the throat, purple, glossed with blue: from the hind head is an elegant pendent crest of green and auricula purple,

marked with two narrow white lines—one of which terminates behind the eye, the other extends over the eye to the bill: the sides of the neck are purplish red, changing on the front of the neck and sides of the breast to brown, and there spotted with white: the scapulars, wings, and tail exhibit various beautiful reflections of duck-green, purple, blue, and velvet-black: the interscapulars, lower part of the back, rump, and upper tail covers are blackish green and dark purple; but several of the lateral covers are reddish orange: on each side of the rump is a splendid reddish purple tuft; but the under covers are brown: the chin, throat, middle of the breast, and the whole of the abdomen, together with a collar round the neck, and a crescent-shaped bar on the ears, are all pure white: the flanks are delicately undulated with black lines upon a yellowish grey ground; the tips of the longest feathers, and also those on the shoulders, being broadly barred with white and black: inner wing covers white, barred with brown. Nearly all the coloured parts of the plumage are glossed with metallic tints: the bill is red; the space between the nostrils, the tip, the margins, and the whole of the lower mandible being black: the legs and irides are of a rich orange. The female differs but little from the male: the crest is shorter, and the colours of the plumage are less vivid; the flanks are not undulated, and the tufts on the sides of the rump are wanting.

According to Mr. Abbot, who communicated many of his observations on the birds of Georgia to Dr. Latham, the summer duck is very common there, and in Louisiana, the whole winter, and sometimes breeds there. He mentions a very singular faculty possessed by the young, which admirably illustrates its analogy to the rasorial, and consequently to the scansorial, type of nature; for, says he, "if you put the young into a tub, they will *climb out* by means of the *bill and feet*." This species is stated to inhabit Mexico and some of the West Indian islands: this is probable, but we can find no proper authority for these localities.

The Mandarine, or Chinese Summer Duck.

Dendronessa galericulata, *Sw.*

Anas galericulata, *Linn. ed. Gmelin*, i. 532. Chinese Teal, *Edwards*, pl. 102. *Latham, Gen. Synop.* vi. 548. *Gen. Hist.* x. 363. Sarcelle de la China, *Buffon*, pl. 805, 806. Kinmodsui, *Kæmpf. Jap.* 129. pl. 10. fig. 3.

This superb and imposing bird is the most striking in its appearance of all the ducks yet discovered. In its native country, which is China and Japan, it is by no means uncommon; and it seems to be there as much admired for the beauty of its plumage as it is in Europe. In the markets of Canton they may be commonly seen exposed for sale in cages, and sold at from six to ten dollars a pair. They are purchased by Europeans, and often arrive in this country alive; but either from a peculiar delicacy of constitution, or, what is more probable, from ignorance or negligence in their management, they have not yet been known to breed with us. It is probable, also, that, unless a genuine pair have been procured from an authentic source, the supposed female may belong to the American summer duck; since Dr. Latham affirms that the latter is so like that of the Chinese sort, as to be readily mistaken for it. The Chinese draftsmen are very fond of representing this species, both upon their paper-hangings and more finished drawings. We know, as yet, nothing of its manners either in its wild or captive state. But the following description of its plumage will sufficiently distinguish it from the American species.

The size is rather larger than our common teal. The bill is pale flesh-colour, when the bird is alive; but dull red afterwards: the feathers on the hind part of the head and nape form a lengthened incumbent crest, having a greenish black stripe on the top of the head and the middle of the crown: the lores are pale rufous: the sides of the head are occupied by a broad white stripe, which narrows beyond the ear, and then passes into the dark glossy green of the crest: the feathers

round the upper half of the neck and throat are long and pointed, as in the domestic cock*, and dull orange; but the lower part of the neck, and part of the breast, is chestnut: on each side of the breast are three transverse black stripes, divided by two others of white; the scapulars also are black, margined with white: the back and rump are dusky brown, glossed with green blue: the wing spot, or speculum, is blue green, bordered below with white; some of the secondary quills are singularly formed, — the outer web being very broad and curved upwards, so as to stand upright when the wing is closed; the broader web is pale chestnut, tipt with black; but the other web is narrow, and of the same dusky black as the other quills: the tail is pointed, of a dull brown, edged with blue green: the sides of the body are light fulvous, crossed transversely with delicate lines of black: lower part of the breast, and belly, white.

The female, according to Latham, is not unlike that of the summer duck; but has two bars of white upon the wing: the breast seems more clouded with brown; and the spots are not of a triangular shape, but rounded: at first sight, however, there appears very little difference between the females of the two species.†

The American Widgeon.

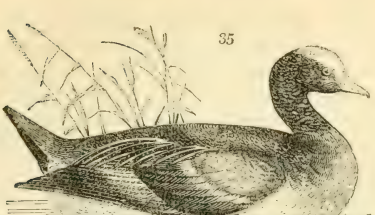
Mareca Americana, *Rich.* (*Fig.* 35.)

Plumage waved with rufous and black; front and crown cream-coloured white: behind the eyes a black green stripe: wing covers white in the middle.

Mareca Americana, *Rich. Northern Zoology*, ii. 446. Anas Americana, *Gmelin, Syst. Nat.* i. 526. *Latham, Index Orn.* ii. 361. Canard Jensen, *Buff. Pl. Enl.* 955. American Wigeon, *Wilson's Amer. Orn.* viii. pl. 69. f. 4.

This is one of the most beautiful of the North American ducks, and well deserves every effort being made to render it as familiar an inhabitant of our

* This is another analogy to the rasorial order.
† Gen. Hist. x. 363.



waters as the English species. Although long incorporated in our systems, its manners, which are very peculiar, were first made known by Wilson. He says that it is of a sprightly, frolicsome disposition, and, with proper attention, might easily be domesticated. It seems to be very common in winter, along the whole coast of the United States, from Florida to Rhode Island; but it is particularly abundant among the rice plantations of Carolina. From some of these localities, we trust, the transatlantic friends of the Ornithological Society will soon transmit a few brace.

This widgeon is the constant companion of the well-known canvas-backed duck of the American rivers, by the aid of whose labour he procures his most favourite food. The widgeon is extremely fond of the tender roots of a particular aquatic plant on which the canvas-back chiefly feeds, and for which that duck is in the constant habit of diving. The widgeon, who cannot dive, watches the moment of the canvas-back's rising; and before he has, after his plunge, well opened his eyes, suddenly snatches the prize from his mouth, and makes off. On this account, the two species live in a state of perpetual contention. The widgeon scarcely feeds during the day; but in the evening it comes out from its hiding-place, and is then easily discovered by its peculiar note, resembling a soft whistle, or the words *whew, whew*. Although so abundant, they are not known to breed in any part of the United States: to

perform this office, however, they depart northward in April, and, according to Mr. Hutchins, appear upon the coasts of Hudson's Bay in May, chiefly in pairs: the female lays from six to eight eggs; and after rearing their young, the whole depart in flocks to the southward in the autumn. Its most southern limits appear to be the lakes of Mexico, from whence we have received specimens answering to those of the United States.

The following is the description of the male bird in full plumage: — A white or cream-coloured band extends from the forehead to the nape, bounded behind the eye by a broad dark-green patch, which ends in the nuchal crest: the upper parts and sides of the breast are deep vinaceous red, glossed with grey: base of the neck above, interscapulars, scapulars, and flanks minutely undulated with brownish red and black: hind part of the back undulated in a similar manner with clove brown and white; the latter colour prevailing on the tail covers: lesser wing covers, primaries, and tail dark brown; intermediate and greater covers, sides of the rump, breast, and belly pure white: the wing spot, or speculum, is velvet-black below, and duck or rich green above, bounded on one side with black, and on the other with white: the outer webs of the tertials, and also the lateral and under tail covers, are greenish black; the former bordered with white: bill bluish grey, bordered and tipped with black. The female has the upper plumage dark liver brown, edged and remotely crossed with pale brown and white: the intermediate wing covers are merely edged with white; and the head is destitute of the green band seen in the male. The tail of the male is acutely pointed; but that of the female is shorter, and not so tapering. The total length of the male is almost two feet; but that of the female is nearly ten inches shorter: the bill is particularly short, being not so long as the head; and the lamina on the side are similar to those of the English mallard, or wild duck.

The Mallard, or Common Duck.

Boschas domestica, *Sw.*

Boschas major, *Ray, Willughby, Synop.* 150. A. i. Anas domestica, *Linn., Auct.* Anas boschas, *Bonaparte, Syn.* 324. The Mallard, *Pennant, Arct. Zool.* ii. 536 *Wilson,* viii. pl. 60. f. 7. Canard sauvage, (Anas boschas) *Temm. Manuel,* ii. 835. Stock Duck, *Hudson's Bay Residents.*

The common mallard, or wild duck, the rasorial type of the genus *Anas,* and that from which all the varieties of our domestic races have sprung, is so well known, that it would not have been introduced in this volume, but for the object of giving greater currency to the methods employed in America, where it is equally common, for securing it; and the more especially, as the same plan might be pursued with equal advantage in the capture of other species under like circumstances. For this information we are indebted to Wilson, who, after giving a full account of the colours of the bird, proving it to be identical with that of Europe, thus proceeds: —

"The common wild duck is found in every freshwater lake and river of the United States in winter; but seldom frequents the sea-shore or salt marshes. In summer, they retire to the north; although instances have been known of some solitary pairs breeding in the United States in autumn. The nest is usually placed in the most solitary recesses of the marsh or bog, amidst the grass or reeds; and generally contains from twelve to sixteen eggs, of a dull greenish white. The young are led and protected in the same manner as by the tame duck; but with a superior caution, a cunning, and watchful vigilance peculiar to her situation. The mallard is numerous in the rice plantations of the southern States during winter; and as many of the fields are then inundated, and the scattered grains of rice from the late harvest float upon the surface, the ducks swim about and feed at pleasure."

The American method of decoying wild ducks is not

generally known, and is as follows: — "In such pieces of water as are frequented by these birds, five or six wooden figures, cut and painted so as to resemble real ducks, and sunk, by pieces of lead nailed on their bottoms, so as to float at the usual depth on the surface, are anchored in a favourable position for the gunner, who lies in concealment on shore: the appearance of these usually attracts passing flocks, which alight, and are shot down. Sometimes eight or ten of these painted wooden ducks are fixed on a frame, in various swimming positions, and secured to the bow of the gunner's skiff, projecting before it in such a manner that the weight of the frame sinks the figures to their proper depth; the skiff is then dressed with sedge or coarse grass, in an artful manner, as low as the water's edge; and under cover of this, which appears like a party of ducks swimming by a small island, the gunner may float down to the very skirts of a large flock, and pour in a destructive and repeated fire among them. In winter, when detached pieces of ice are occasionally floating in the rivers, some of the gunners on the Delaware paint their whole skiff or canoe white; and laying themselves flat at the bottom, with their hand over the side, silently managing a small paddle, direct it imperceptibly among or close to a whole flock, before the birds have distinguished it from a floating mass of ice; and by this artifice the gunners generally make great havoc among them: indeed, a whole flock, in this manner, have been suddenly surprised when asleep, with their heads under their wings. On land, another stratagem is sometimes practised with great success: a large tight hogshead is sunk in the flat marsh, or mud, near the place were ducks are accustomed to feed at low water, and where otherwise there is no shelter; the edges and tops are artfully concealed with tufts of long coarse grass and reeds or sedges; from within this, the gunner, unseen and unsuspected, watches his collecting prey, and, when a sufficient number offers, sweeps them down with great effect."

The Roan Duck of Abbot, slightly noticed by that well known collector to Dr. Latham, and placed by him as one of the varieties of the mallard, may probably be a distinct species; and deserves to be imported into this country, from Savannah in Georgia, where, according to Abbot, they are in great plenty about the beginning of November: they seem to differ from ours, not only in size, being full twenty-six inches long, but by having the head ash-coloured, mixed with dusky spots: the wing spot, or speculum, is like that of the mallard, but is not bounded by white; neither are there any curled feathers in the tail. The common length of the full grown wild duck of this country is twenty-four inches.

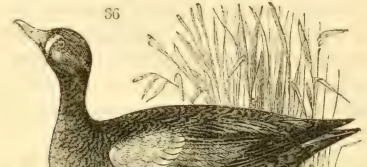
The imposing accounts of the celebrated decoys in Lincolnshire, given by Pennant and Bewick, and other writers, and the enormous multitudes of birds which were then taken, will soon become by-gone histories: even Montagu, who wrote so far back as 1813, observes, that the common duck, as well as other wild fowl, becomes scarcer every year in a country like this, where agriculture makes such rapid progress; few, comparatively, remain to breed with us, since the more extensive fens have been drained and converted into pasture. The great fenny tracts in Lincolnshire do not produce a dozen broods of wild fowl at present; where, half a century back, as many thousands were hatched. In a tour through that country, observes colonel Montagu, during the incubating season, we observed that the mallards congregated while the ducks were sitting; it is therefore probable, that, like the domestic ones, they are mostly polygamous.

The Blue-winged Duck.

Boschas discors, *Sw.* (*Fig.* 36.)

Anas discors, *Linn.*, *Gmelin*, i. 535. *Wilson*, viii. pl. 68. f. 4. *North. Zool.* ii. Sarcelle Soucrourou, *Pl. Enl.* 866. male, 403. female. White-faced Duck, *Arctic Zool.* ii. 503. *Lath. Gen. Syn.* vi. 502. male. Blue-winged Teal, *Lath. Gen. Syn.* vi. 503.

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The blue-winged duck is one of the smallest and most elegant of the American freshwater ducks; and although we have no evidence of its having been in any way domesticated, yet there is nothing in its history to induce the belief that it would not thrive very well, if not propagate, on our inclosed waters. Although long known to naturalists, who had classed the sexes as distinct species, we must have recourse to the celebrated ornithologist of America, the immortal Wilson, for all that is interesting in its natural history.

The blue-winged duck is the first of its tribe that returns to the United States in the autumn, from its breeding-place in the north. They are usually seen in September, along the shores of the Delaware, sitting on the mud close to the edge of the water, so crowded together, that the gunners often kill great numbers at a single shot. When a flock is discovered thus sitting and sunning themselves, the experienced sportsman runs his canoe ashore at some distance below or above them, and getting out, pushes it before him over the slippery mud, concealing himself all the time behind: by this

method, he can sometimes approach within twenty yards of the flock, among which he generally makes great slaughter. They fly rapidly; and when they alight, they drop down suddenly among the reeds, or on the mud, like the snipe or woodcock. They feed chiefly upon seeds; and are very fond of those of the reeds, and of wild oats. Catesby observes, that they come into Carolina in August, and feed on the rice, remaining there till October; and when the rice fails, they attack the wild oats. This writer also adds, that they chiefly frequent the ponds and fresh waters. Their flesh is excellent: and after their living, for a short time, among the reeds or rice plantations, they become very fat. As the first frosts come on, they proceed to the south; for their constitution seems delicate, and very susceptible of cold. It appears, however*, that Dr. Richardson met with them on the banks of the Saskatchewan, in the month of June, where they were very plentiful; but they were not observed by the officers of the expedition further north than the 58th parallel. They abound, as Wilson says, in the inundated rice fields, in the Southern States, where vast numbers are taken in traps placed on small dry eminences that here and there rise above the water: these places are strewed with rice; and by the common contrivance called a *figure four*, they are caught alive in hollow traps. In the month of April, they pass through Pennsylvannia for the north; but make little stay at that season. On the Hudson River, opposite the Katskill Mountains, they are very numerous. In all localities it appears quite a river bird, for it rarely visits the sea shore. We have received specimens from the lakes of Mexico, which seem to be the only authenticated limits of its southern range.

The male has the upper plumage on the head, and under tail covers, brownish black, with a very conspicuous broad white crescent-shaped spot from the forehead to the chin, bordered all round with black: sides of

* North. Zool. ii. 436. 444.

the throat, and adjoining half of the neck, bright lavender purple: the base of the neck above, the back, the tertials, and the tail covers brownish and blackish green: the fore parts, including the shorter scapulars, margined and marked with semi-ovate pale brown bars: the larger scapulars are longitudinally and very elegantly striped with blackish green, light sky-blue, and pale brown: the whole of the shoulder and lesser wing covers are of a pure light or sky-blue; but the greater covers are white, with their bases brown: the wing spot is of a rich dark green: the primaries, their covers, and the tail are liver-brown: sides of the rump, the longest of the under wing covers, and the axillary feathers are pure white: the under plumage pale reddish brown, glossed with chestnut on the breast, and thickly marked throughout with round blackish spots, which are changed to bars on the breast and tips of the long flank feathers: the bill is bluish black; and the feet are yellow.

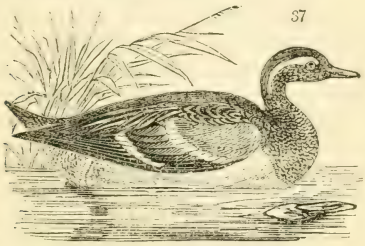
The female is so unlike the male, that, before Wilson ascertained its identity, it was always thought a distinct species. It wants the white patch on the sides of the rump, the crescent before the eyes, and the rich purple tint on the head and neck: the upper plumage is brown, and the pale bars are less distinct; the under plumage is white and brown, with irregular blotches of a darker colour, instead of neat round spots: the wings as in the male. The young birds want the green speculum on the wings; and in other respects are like the female. The total length of the full grown male is about eighteen inches.

The Gargany Duck.

Boschas circia, *Sw.* (*Fig.* 37.)

Grey, varied with black; with a white stripe beyond the eye: wings with a green speculum.

Anas circia, *Linn.*, *Auct.*, *Selby*, plate 53. male and female. Anas Querquedula, *Temm Man.* ii. 844. Querquedula circia, *Leach*, *Cat. Brit. Mus. Selby*, ii. 318. La Carcelle d'été, *Pl. Enl.* 946. *Temm. Man.* ii. 844. Gargany Teal, Summer Teal, *of British Authors.*


37

The vernacular name of *Teal* seems a common designation for all ducks of a very small size; and has been extended not only to those comprised in the restricted genus *Anas*, but to many others, such as the *Dendronessa galericulata*, or mandarine duck, without any regard to the true characters of the birds. In our former paper on this family, we endeavoured to show that there were not sufficient marks of difference between the domestic duck and the ordinary teal, to authorise their separation, even as subgenera; and we have not, therefore, adopted that of *Querquedula*, since the characters that have been assigned to it appear to me by no means sufficient to warrant its separation.

The gargany is the most beautiful, in the delicacy and variety of its colours, of all the species found in Europe; and being not only a river duck, but one that shows the greatest aptitude for domestication, it is peculiarly adapted to enliven and ornament our aquatic

preserves. The following notice of its manners, given by Fresch, in his account of the birds of the Netherlands, is so appropriate to our present purpose, that we shall at once transcribe it.

"Soon after two of them coming into my possession, I presented different seeds to them, which they did not eat; but scarcely had I set before them a basin filled with millet, than they eagerly ran to it. At every mouthful which they took, each went to the water; and they carried so much of it in a short time, as completely to soak the millet: yet still the grain was not sufficiently moistened to their mind, and I saw them busied in carrying millet and water to the ground of their pen, which was of clay; and when the bottom was sufficiently softened and tempered, they began to dabble and make a pretty deep cavity, in which they ate their millet mixed with earth. I put them in a room; and in the same way they carried the millet and water, though to very little purpose, to the deal floor. I led them to the grass, and they seemed to do nothing but dig for seeds, without eating the blades, or even earthworms; but they pursued flies, and snapped at them like ducks.* When I delayed to give them their accustomed food, they called for it with a feeble hoarse cry, like *quoak*, repeated every minute. In the evening they lay in the corner; and even during the day, when any person went near them, they hid themselves in the narrowest holes. They lived there till the approach of winter; but when the severe cold set in, they both died suddenly."†

This latter catastrophe might, of course, have been easily prevented, had the birds been removed into a warm

* A beautiful illustration of the analogy which all broad-billed birds have to the fly-catchers, and consequently to the *Fissirostres*.

† I cannot refrain, in this place, from calling the attention, not only of the naturalist, but of the most inexperienced amateur, to this simple yet interesting specimen of ornithological biography. It is replete with facts which indicate the true nature of the bird; and of the circumstances by which its affinities, in a great measure, are to be decided. What a fund of valuable information would a collection of such anecdotes contain, if every one who kept living birds in their possession, would note their manners in the same way, and in the same simplicity of style; and how much might thus be done, more especially by persons abroad, to inform us of the habits of exotic species, of which we as yet know absolutely nothing!

dwelling, within a temperature above the freezing point. The gargany seems to be abundant in Holland; and it might, therefore, be imported in sufficient numbers to guard against such casualties.

This species is no less delicate in its shape than in its constitution; for it is quite unknown in the northern regions, while on the warm shores of the Mediterranean it is by no means uncommon: we frequently met with it on the Faro lakes, or rather marshes, near Messina; and also on those of Leontini and Syracuse. In Britain, it is so rare as to be considered only an occasional visiter; and, even then, seems only to be found in Norfolk and the warmer counties; for we are unacquainted with any authenticated instance of its having been found in the North of England, far less in the Orkney Islands, as some writers have intimated. In its food and manners it seems to resemble the common teal; feeding, as it is alleged, upon larva, slugs, and insects*, as well as upon the seeds of different aquatic plants, which it sifts in the usual manner. It breeds only in temperate climates; building its nest among thick plants and shrubs, in low and damp meadows or marshes: the eggs are about ten or a dozen, and of a yellowish green colour.

The gargany is stated to be widely spread over the northern parts of Asia, as far as the frigid regions of Kamtschatka: but this we do not believe; for, certainly, if it could endure such a climate, it would have been found also in the North of England, and even in Scotland. We are confirmed in its being an extra-arctic species, by the localities mentioned by Temminck, who evidently considers it as spreading only to the central provinces of Europe; nor is it known in North America. We rather think that the common teal, or some other species, has been mistaken for this, by such persons as have given it a northern habitation.

The plumage of the male is as follows:—Crown of the head blackish; which colour is deeper on the chin

* This alleged fact, however, seems to be disproved by the foregoing observations of Fresch.

and throat: a white stripe passes through the eye, and extends over the ears to the nape: the head and neck are brownish rufous, sprinkled with small white spots; but the lower part of the neck and breast are variegated with black bands: a white band extends down the middle of the scapulars, which are narrow, lengthened, and pointed. The wing covers are bluish ash or cinereous; the speculum of the wings is of a rich green, with a delicate cinereous gloss, and is bordered by two white lines: the body beneath is yellowish white, with the flanks marked by zigzag black transverse lines: the bill is blackish; and the legs are dull lead-colour.

In the female, the white bands on the head are varied with black spots: throat white: upper plumage blackish brown; the feathers with their margins paler: the speculum on the wings is not so bright; and the lower parts of the breast and belly are white: the flanks and abdomen are spotted with brown. The young male birds, so soon as they begin to throw off the dress of the female, at the beginning of winter, are stated to have the white throat; white intermixed with some dark feathers; the white eye-band, spotted with brown; and other indications of the male sex.

It is really surprising, that such an acute observer as Montagu should have placed this bird as a variety of the common teal; an error which renders all he has said of the manners of the two species, as thrown into one, perfectly useless.

The Beautiful Duck.

Boschas formosa, *Sw.* (*Fig.* 38.)

Sides of the head pale buff: chin, and band from thence to the eye, velvet-black: sides of the neck with a green stripe, ending in black, and bordered by white: crown black, margined by a white line.

Anas formosa, Baikal Teal, *Lath. Synop.* vi. 557.

We introduce the description of this most elegant bird, to stimulate the efforts of our collectors to effect its intro-



duction into this country. We were favoured with an inspection of very perfect skins of the male and female, some years ago, by J. E. Gray, Esq.; and we executed figures of them for one of that gentleman's unpublished works; but these still remain unavailable to science; and as there are several inaccuracies in the only description of this bird that has yet been given to the world, we shall here insert our own. Mr. Gray's specimens, if we remember right, came from China. But as Dr. Latham says it is found in Russia, about the Lake Baikal, there can be but little doubt of its living in this country, if properly protected against the severe cold of our winters. Nothing whatever is known of its manners.

The size of this lovely bird is equal to that of the common teal; and the structure, with some few exceptions, is similar: the bill is equally high at the base, but considerably narrower: the tail is much longer, and exceeds the under tail covers by a full inch; whereas, in *Boschas crecca*, or the common teal, the covers are as long as the tail: the first quill feather is rather shorter than the second, which is the longest; and the outer web is suddenly narrowed near the end: the long scapulars reposing on the tertials, are narrow, and resemble, both in form and colour, those of the pintail duck, — an affinity further manifested by the length of the tail: the hind head is subcrested, like that of the common teal; and the laminæ of the bill are scarcely seen beyond the margins of the upper mandible.

We shall now make an effort, assisted by the annexed figure, to give an adequate idea of the extreme beauty of the plumage. The crown of the head is occupied by a patch of deep brown, which begins at the front, and terminates in a point at the hind head: the ground colour of the sides of the head, chin, and part of the throat, is of a delicate nankeen yellow, having a narrow transverse band of velvet-black from the eye to the middle of the chin, which is also black: a large crescent-shaped spot of bright green then begins behind the eye, and makes a curve half way down the throat, where it changes into velvet-black, and ends in a point; this is separated from the brown patch on the crown by another band of pure white on each side of the head, which almost meet on the hind head, and then becomes suddenly broader, but still forming a margin to the green: all the rest of the throat and breast is vinaceous red, varied with small round black spots, one at the tip of each feather: this red is blended, on the sides of the neck and breast, into an undefined band of light grey (undulated with delicate blackish lines), which also extends to the shoulder covers: the sides and flanks of the body are also of the same colour, and similarly marked: the middle of the neck above, the whole of the back, rump, and upper tail covers, are rather light, or hair brown: lesser scapulars and lesser wing covers the same; but the tips of the latter are ferruginous, and form the anterior side of the mirror, or wing-spot: this mirror occupies the whole of the greater wing covers, and is black, glossed at the base with a beautiful green, and margined towards the quills with white: the long scapulars are narrow and pointed, black in the middle, ferruginous on the outside, and white on the middle margin: the terminal under tail covers are velvet-black, with a white band on each side the base of the tail; the lesser tail covers being pale yellowish white: the quills and tail are nearly the colour of the back; but some of the secondaries, just above the mirror, have white and black stripes: bill and feet dark lead-colour.

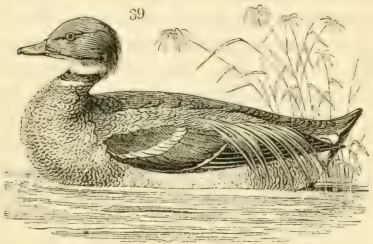
The dimensions of the male above alluded to, were as follows: — Size and length of the common teal. Bill $1\frac{7}{10}$; wings, $\frac{2}{10}$; tail beyond, $1\frac{3}{10}$, the same from the base $3\frac{1}{2}$; tarsus $1\frac{2}{10}$; middle toe $\frac{9}{10}$.

The Javanese Duck.

Boschas Javanica, *Sw.* (*Fig.* 40.)

Plumage of the body undulated with black transverse concentric lines: head and nuchal crest chestnut, glossed with coppery green: chin and neck pure white; the latter with a glossy green collar.

Anas Javanensis, *Lath. Gen. Hist.*



This is evidently a river duck; and, from its singular beauty, should be a species of primary importance to the preserves of the Ornithological Society, whose objects are more especially devoted to the aquatic tribes. A preserved skin was sent from China, along with that of the beautiful duck just described; and we trust that, through the exertions of some of our active countrymen resident in its native country, living examples will soon be imported.

Whether this is the Javanese Teal of the Zoological Society's Catalogue, I know not, for the name of "*Anas formosa*, Pallas," is attached to that specimen; this latter name being our Beautiful Teal, or Latham's Baikal Teal. The following description, taken from a

specimen sent to Mr. Gray, and figured at the same time as the preceding, will at once show how very different it is from the *Anas formosa* of Pallas.

In regard to form and structure, the bill, in breadth, contour, and elevation, is much more like that of the mallard than of the common teal, although much less in proportionate size: it is consequently more depressed than that of *B. crecca* or *formosa*, and the upper laminæ project rather more than in those birds: the nape is very conspicuously crested; the longest feathers measuring fully two inches: the tail is short, not longer than the under covers; and the two outer feathers are alone graduated: the wings are rather long; the first and second quills nearly equal; and the second is externally sinuated near the end of the outer shafts.

The affinities of this species appear to us to be closer to those of the common wild duck (*B. domestica*), than to any other of the group: this is indicated by the form of the bill, the white collar round the neck, and by the long wings and short tails, almost hid by the under covers. The subgenus *Boschas* represents, in its own circle, the eiders; and this may account for the dependent long scapular covers, so conspicuous in this elegant bird.

The colouring of the male,—the only sex we have yet seen,—is very peculiar. The sides and upper part of the head, as well as the nape, are of a full dark chestnut, richly glossed with coppery green; but the chin, and all round the neck for about a quarter of its length, is pure white, encircled with a narrow glossy green collar: the whole of the plumage beyond this (excepting the wings and tail), both above and below, is cinereous white; each feather being marked with concentric lines of black, which give to the feathers a scale-like appearance; these are broadest and darkest on the neck and breast, and lightest and narrowest on the tertials and belly: the wings are cinereous grey; the mirror deep velvet-black, bordered towards the tail by a line of white, and above by some of the secondaries being rich glossy green: the

wing covers have no concentric lines: the long scapulars, or rather the tertials, are much developed, and hang down on each side over the primary quills; their bases are white; beyond which they become black, but edged, and divided in the middle, by white lines: the rump is dusky, changing to deep black on the upper and under tail covers: at the base of the tail, on each side, is a large triangular cream-coloured spot, bordered by velvet-black: the bill and feet are dull lead-colour.

Size, larger than the Beautiful Duck. Total length 16 inches; bill $1\frac{7}{10}$; the breadth $\frac{13}{20}$: wings 9, and reaching to the end of the tail; tail, from the base $2\frac{3}{4}$; tarsus, $1\frac{2}{10}$.

The Common Gadwall.

Chauliodus strepera, *Sw.*

Above, brown, with pale undulations; beneath, varied with grey and white: speculum white, edged with rufous.

Anas strepera, *Linn.*, *Auct.*, *Wilson*, *Am. Orn.* pl. 71. f. 1. Canard chipeau, *Buffon*, *Pl. Enl.* 958. *Temm. Man.* ii. 837. Chauliodus strepera, *Sw.*, *Journ. Roy. Inst.* ii. 19. *Selby*, ii. 301. Gadwell, or Grey, *of British Authors.*

Although the gadwall cannot be ranked among the most ornamental of our ducks, it is nevertheless an agreeable acquisition to our preserves, as adding to the variety and contrast of colour so desirable in collections. Although a rare visiter with us, it may easily be procured from Holland, through the London dealers; for M. Temminck states that it is abundant in the Low Countries, where it breeds in the great marshes and swampy meadows. In this country it seems but an occasional visiter, sometimes met with in the low and swampy districts of Norfolk, where, as Mr. Selby conjectures, it has probably been driven by adverse winds out of its usual line of flight. It is, indeed, somewhat singular that it should be so scarce in Britain, seeing that it is by

no means uncommon in the northern and midland countries of Europe. It is recorded by Wilson, however, as a "very rare" visiter in the northern parts of the United States, although generally dispersed in other parts of the Union. From Dr. Richardson's * account, indeed, it braves the rigours of the arctic regions, breeding in the woody districts of the Barren Grounds, up to their most northern limits, in latitude 68°; and his specimens were shot on the Saskatchewan, towards the middle of May.

The haunts of the gadwall, in America, are on the lakes, rivers, and marshes of the interior, particularly such as abound with reeds and rank aquatic grasses, in which they so much delight, as seldom to visit the sea coast: their food, of course, is procured in such situations, and consists of aquatic insects, plants, and seeds. Dead birds are not unfrequently exposed for sale in the poulterers' shops of London, in May and June; and we have likewise seen them in those at Liverpool. It feeds during the night, and passes the day concealed among the reeds and rushes. In comparison with the mallard and other kindred forms, its powers of flight are very superior; and, unlike most of the river ducks, it dives with the same facility and frequency as many of the lobed or marine ducks.

In the male, the head and neck are grey, spotted with brown: the under part of the neck, the back, and breast are marked with black lunules: the scapulars and sides are barred with zigzag lines of white and blackish: the lesser wing covers are chestnut red; the greater covers, rump, and under tail covers being deep black: the speculum, or wing spot, is altogether peculiar, being of the purest white, bordered below with black, so as to form three broad bands on the wing, of chestnut, black, and white: belly dull white: rump and tail covers glossed with green: bill brownish black: legs orange red.

* North. Zool. ii. 436.

The Eider Duck.

Somateria mollissima, *Leach.*

Somateria mollissima, *Leach*, in *Cat. Mus. Brit. Selby*, *Brit. Orn.* ii. 338. *Northern Zool.* ii. 448. Anas mollissima, *Linn.*, *Auct.*, *Wilson*, viii. pl. 92. f. 2. and 3. *Montagu*, *Orn. Dict.* vol. i. and Suppl. Oie à duvet, ou Eider, *Buffon*, *Pl. Enl.* 289. 209. male and female. Canard Eider, *Temm. Man. Orn.* ii. 848. Eider or Cuthbert Duck, *Will.*, *Penn.*, *Lath.*, &c. Eider, Cuthbert Duck, Dunter Goose, *Provincial English Names.*

The opinion of so accurate and experienced an observer as Mr. Selby, that he has no doubt this beautiful species may be domesticated, is sufficiently sanctioned by the reasons he assigns; and this at once gives it a place in our present enumeration of the tameable *Anatidæ*. Colonel Montagu, indeed, remarks, that he "has known the young taken from the Fern Islands, in hopes of domesticating them; but all attempts proved ineffectual, probably for want of proper food:" but Mr. Selby, on the other hand, distinctly says,—"I have twice succeeded in rearing these birds from the egg, and preserving them alive till upwards of twelve months; but, as I had no appropriate place for them at the time, they fell *victims to accident alone*, being trodden upon by horses or cattle. Indeed," adds our author, "their sluggish nature, or rather their inactivity upon land, renders their escape from any sudden danger a matter of great difficulty. I know, also, other instances in which they have been reared from the egg to maturity."* Encouraged by such authority, we strongly recommend the attempt to the Ornithological Society. Through the assistance of such of its members as reside on the coast of Northumberland, where these birds are known to breed, a few of the eggs might be procured at the proper season, transmitted to London, and hatched under a domestic duck: the young birds, thus initiated by its

* Ill. of Brit. Orn. ii. 341.

foster-mother, in all probability, might be taught to feed in the same way; and with such noble preserves of water as are at the Society's disposal in the royal parks, these elegant creatures would have "ample room and verge enough" for the full exercise of their diving and swimming powers.

The eider duck, in its natural state, is rarely ever seen on the southern coasts of England, although Montagu says it breeds in the north of Scotland and the Fern Islands; where, however, according to Mr. Selby's later observations, they have of late years very much decreased, in consequence of having been wantonly molested during the breeding season. Coquet Island, which forms one of this small group, seems to be the most southern breeding station of these birds. On entering the arctic regions both of Europe and America, they seem gradually to increase in number. Dr. Richardson found them to be only partially migratory in the Hudson Bay regions; for the older birds seldom moved further southward in winter than to permanent open water; but some of them go south, and winter on the coast of New Jersey: he considers them peculiarly sea ducks, as he has never seen them in fresh water: this is not, however, conclusive authority, or, at least, is not sufficient to deter us from the attempt to introduce them upon our canals or ponds. In America, their most southerly range appears to be the rocky islands beyond Portland, in the district of Maine; where a few pairs have been known to breed. In Greenland and Iceland they seem to be very common; and they are occasionally seen so far south as the capes of the Delaware.

In Britain, the eiders which breed in the Fern Islands, are seen assembling, about April, in small groups along the shores of the main land, whence they cross over to the islands in May; soon after which the females begin to prepare their nests; and they usually commence laying about the 20th of this month: upon this the males leave the females, and again spread themselves

along the shore in companies of four or five together. The usual number of eggs is five, of a pale asparagus-green colour, of an oblong form, and not much less than those of a goose. Wilson describes the eggs as of a pale olive colour, and says they are extremely smooth and glossy; and Montagu calls the colour greenish olive: it is important to notice these different accounts, in order to guard against any mistakes of the people in procuring the right sort. The nest, as examined by Mr. Selby, is composed of dry grasses, mixed with a quantity of the smaller *Algæ*, or sea-weed; and as incubation proceeds, a lining of down, plucked by the bird from her own body, is added. This addition is made daily, and at last becomes so considerable a mass as to envelope and entirely conceal the eggs; contributing, perhaps, by its effect as a non-conductor of heat, to the perfect developement of the fœtus; and serving also as a protection from gulls and other enemies. The young, as soon as hatched, are conducted to the water, which in some instances must be effected by the parent conveying them in her bill; Mr. Selby having often seen the nest in such situations as to preclude the possibility of their arriving at it in any other way: and this has been confirmed by the testimony of an eye-witness.

Much has been written regarding the *down* of the eider; the greatest part of which seems to be imported from Iceland and the northern countries. Mr. Pennant and Dr. Latham have been at much pains in collecting a great many details from books, on this head, which it is not necessary to repeat in this place.* Mr. Selby remarks, that from the nests of two or three of these birds he has frequently procured as much down as would fill a middle-sized pillow; though this quantity, when compressed, was not above two handfuls, and did not weigh above an ounce. In Iceland, Greenland, &c., where the procuring of this substance is a support to many people, the first eggs that are laid, together with the down, is taken from them; but the next they are

* See Lath. Gen. Hist. x. 264.

allowed to hatch, though a part of the down is removed from time to time; the female continuing to supply it as long as any remains upon the lower part of her body.

The flight of the eider is excessively swift and strong; for major Cartwright found it, by repeated experiments, to be at the rate of ninety miles an hour.* When approached in a boat, they generally take wing while beyond gunshot; and when suddenly surprised, they dive: if patiently and perseveringly pursued, however, and compelled to dive repeatedly, they become fatigued, and the sportsman has then a chance of shooting them; but the flesh is very unpalatable.

The size of the eider is nearly double that of the common duck. The upper part of the head is deep velvet-black, divided laterally on the hind head by a whitish band: the cheeks are white; but the sides of the head are of a delicate pea-green, marked with a narrow line of white passing from the ears; the feathers being lengthened, but the ends even, so as to appear cut off: upper part of the neck, scapulars, lesser wing covers, and sides of the rump pure white: lower part of the breast, belly, and vent deep black: greater and lesser quills, together with the tail, brownish black: the tertials are narrow, and so much curved as to fall over the wing: legs yellow.

The female is thus described by Montagu: — "Bill dusky: nail horn-colour: irides yellowish: the whole plumage of a dusky colour, mixed with ferruginous: head and neck pale brown, more or less dashed with ferruginous and dusky streaks: back, scapulars, and smaller covers of the wings dusky black; each feather margined with ferruginous brown: quills dusky; palest on the inner webs and points of the secondaries, but without any white band or bar on the wing, as usually described: breast, and all the under parts, mixed with pale ferruginous, and dusky in small specks and streaks: tail short, uniform, and dusky brown: legs and feet dusky black.

* Montagu, Orn. Dict. Supp.

The eider does not acquire its mature plumage till either the third or fourth year. In the first year, as Montagu affirms, the back is white; and the usual part, except the crown, black; the rest of the body variegated with black and white. In the second year, the crown becomes black, and the neck and breast spotted with black and white.

Captain Parry says that the Esquimaux Indians catch these birds on the nest with springes made of whalebone, and take the eggs wherever they can find them. Captain Scoresby says a variety (?) he found in Spitzbergen was very little larger than the common domestic duck.

The King Eider.

Somateria spectabilis, *Leach.*

Somateria spectabilis, *Leach, Cat. Brit. Mus. Selby, Ill. Brit. Orn.* ii. 342. *North. Zool.* ii. 447. *Bonap. Synop.* p. 332. Anas spectabilis, *Linn., Auct., Sabine,* in *Linn. Tr.* xi. 553. Le Canard à tête grise, *Temm. Man.* ii. 851. Grey-headed Duck, *Edwards,* pl. 154. King Duck, *Pennant, Latham,* &c.

The manners of the king eider, the most simply beautiful of the whole of this group, appear to be much the same as those of the common eider; but whether there is an equal chance of keeping it alive in these temperate latitudes, admits of some doubt, seeing that its southern range is much more limited: it has not been met with, in fact, to the south of the Orkney and the neighbouring isles. Dr. Latham states, that in Greenland it is as common as the ordinary eider; and it appears to be distributed in all the arctic regions of both Europe and America.

Otho Fabricius mentions, that the natives of Greenland hunt them both for their down and skins, in the following manner: — On discovering a flock upon the water, the natives assemble in their canoes, and begin shouting and making as great a noise as possible: this sudden outcry so frightens the birds, that, instead of

flying away, they begin to dive: the moment they come to the surface, they are again pursued; and after three or four of these chases, the birds begin to be so tired that they are easily taken and killed.

Mr. Hutchins says that the king eider is plentiful at Churchill River, Hudson's Bay, in 59° N. latitude, where it remains as long as the water is unfrozen; but that at York Fort it is scarce. It builds at the sides of fresh waters; the nest being made of sticks and moss, and lined with feathers, like that of the common eider: the eggs are yellowish white, and as large as those of a goose: the young fly in July; and *the food is generally worms and grass.** The same gentleman mentions, that it is called by the Hudson's Bay Indians *Mis-se-sheep.*

Pennant asserts that it is sometimes found in Orkney; but the only instance, in modern times, of its having been met with there, rests on the fact of Mr. Bullock having found a single nest of it in Papa Westra Island, built on a rock impending over the sea.

Captain Sabine observes they are very numerous on the coast of Greenland, in company with the common eider; but they were too shy to approach the ships, so that he only procured a single specimen.

It is not the brilliancy or the variety, but the rich and harmonious combination, of its colours, which makes the title of "*King*" so peculiarly applicable to this noble bird. The size is nearly that of the other species. At the base of the bill, in the male, is a high protuberance, considerably compressed on the sides, but flat at the top, where it is covered with velvet-black feathers, which pass on each side to the eye: the crown of the head and nape are of a delicately beautiful grey: at the base of the upper mandible the feathers are pea-green, passing backwards on each side of the neck, and taking in half the eye; beneath which, and

* We cannot reconcile this account with what Dr. Richardson says of his thinking this bird is never seen in fresh water, and that its food mostly consists of the soft mollusca so abundant in the Arctic Sea. If it really feeds also on "worms and grass," there would be no difficulty in keeping it alive in our inclosed ponds, if our summer did not prove too hot for its constitution.

round to the chin, the feathers are of a dull white; here the two colours are blended, and the white is lost by degrees in the green: under the chin is a black mark, diverging like the letter V inverted; the rest of the neck and breast are whitish; but the middle of the back, the belly, and the vent are deep black: the wings are dusky; a patch of white being on the middle of the covers: quills black; the secondaries curving downwards; the shafts deep ferruginous, with a patch of white; on each side of the outer ones a patch of white: the bill is rich red; and the naked sides of the elevated lobe, at its base, rich orange: tail black: legs and toes ochraceous yellow.

The plumage of the female closely resembles that of the common eider; but is readily distinguished from that by the form of the frontal process.

We have not yet heard of any instance of this king of ducks being alive in any collection; and even stuffed specimens are rarely to be met with among our commercial naturalists.

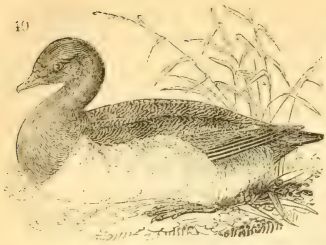
The Red-headed Pochard.

Fuligula ferina, *Leach.* (*Fig.* 40.)

Head and neck bright rufous: breast black: back and upper plumage blackish cinereous, undulated with transverse grey lines; under parts white, with cinereous lines: rump and under tail covers black.

Fuligula ferina, *Leach, Cat. Mus. Brit. Selby, Ill. Brit. Orn.* ii. 347. Anas ferina, *Linn., Auct., Wilson,* viii. pl. 70. fig. 6. Anas rufa, *Gmelin, Latham,* &c. Canard Milouin, *Buff. Pl. Enl.* 803. male. *Temm. Man.* ii. 868. Pochard, or Red-headed Wigeon, *of British Authors.*

Although this well-known bird truly belongs to the natural division of the *Fuligulinæ*, or sea ducks, it is yet one of those very few which frequent fresh water in preference to such as is salt; and it possesses, moreover, a very decided aptitude for domestication: hence, from being also a common bird in a state of nature, and



therefore easily procured, it is one of those which every gentleman may possess with advantage, if his grounds contain a piece of water sufficiently large to admit of enjoyment to the bird, and where its dexterity in diving may interest and amuse the spectator.

This duck, like the majority of its congeners, is only a winter visiter in the British islands, which it flies to as a shelter from the intense cold of the northern regions. It is then most abundant in the fens of Lincolnshire and Norfolk; but of late years the numbers have very considerably diminished; and the majority of those now sent to the London markets, where they are often called dun-birds, are procured by shooting. Mr. Selby says, that in the northern parts of England, and in Scotland, it is somewhat rare. This he attributes either to the deficiency of some particular food, or from those districts being out of his migratory line: we are more disposed, however, to attribute it to the simple fact, that these northern parts of the empire are too cold for the pochard; in proof of which he passes them over, that he may, by going more southerly, secure to himself a warmer atmosphere for the winter. Certain it is, that this bird loves a mild and temperate climate; for it extends its southerly migrations in America as far as the lakes adjoining the city of Mexico, as specimens which have been sent direct from thence sufficiently testify; while Dr. Richardson establishes its migrations northward, during summer, to the utmost limits of the fur countries, where it breeds.

The pochard is a remarkably good diver, swims very rapidly, and flies swiftly in a compact flock; differing in this from the generality of ducks, which fly in a tri-

angular form. It seems naturally to prefer freshwater lakes, rivers, and marshes; but occasionally is found on the sea shore, near the mouths of rivers. Mr. Selby observes, that it breeds among aquatic herbage; laying twelve or fourteen eggs, of a greenish white colour. It becomes very tame when in confinement; and we have colonel Montagu's authority for saying that no bird appears sooner reconciled to the menagerie. One that was in his possession, and that had been winged, took to feeding on corn immediately; and, after three years' confinement, was in high health, and very tame: it should, nevertheless, have free access to water; being unable to exert itself much on land, from the backward position of its legs, and the great size of its feet.

In former times, when these birds were much more abundant than they are now, vast quantities were taken by nets. This mode of capture, as stated by Montagu, we shall here insert, as it may probably be useful for other foreign species, and may contribute to fill our preserves with others more valuable.—"Poles were erected at the avenues to the decoy; and after a great number of these birds had collected for some time on the pool (to which wild fowl resort only by day, and go the neighbouring fens to feed by night), a net, at a given time, was erected by pulleys to these poles, beneath which a deep pit had previously been dug: and as these birds, like the woodcocks, go to feed just as it is dark, and are said always to rise against the wind, a whole flock may be taken together in this manner; for, when once they strike against the net, they never attempt to return, but flutter down its sides till they are received into the pit, whence they cannot rise; and thus, we have been told, twenty dozen have been taken at one catch." We omitted to mention, in its proper place, that we have met with this species, in great abundance, on the lakes of Leontini, in the island of Sicily, during an autumnal ornithological tour to these celebrated but pestilential marshes in 1812. Wilson remarks of the American race, that, with the connoisseurs in good eating,

it ranks next in excellence to the canvas-back duck about to be described, and which it much resembles in plumage.

The colour of the male, on the head and neck, is rich chestnut: the lower part of the throat, breast, and upper part of the back are black, marked with fine undulated lines of grey: the back and scapulars are marked, in the same manner, with cinereous and dusky lines; smaller wing covers the same, but darker; greater covers and secondary quills blue grey; primaries cinereous grey: rump and under tail covers black: under parts of the body dusky white, faintly undulated with zigzag dusky lines, which are blackish at the vent: tail feathers fourteen, and coloured like the wings: bill and feet bluish grey; the tip and base of the former being black.

The female differs in having the head and neck ferruginous brown; the breast and belly dusky white, clouded with brown; and the under tail feathers dusky and white: in other respects, as Montagu says, it is like the male, but the markings are all less distinct.

Mr. Selby does not notice the female, but he describes, in the following words, what he considers a variety, killed upon the Northumberland coast, and now in his collection. — "Head and neck bright reddish orange, passing into reddish white upon the crown: breast very pale broccoli brown *, with a silky lustre: all the rest of

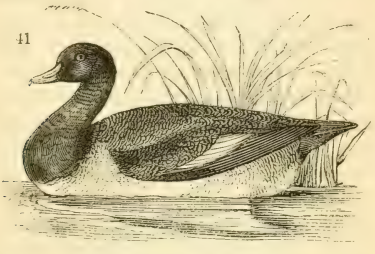
* Two or three of our best ornithologists, from a laudable desire of introducing a distinct and peculiar nomenclature of colours, have adopted certain terms like this, which, to those who are unacquainted with the standard they refer to, are generally very perplexing, and often unintelligible. With every deference to the opinion of my friends upon this subject, I must confess my very strong objections to all such terms as are not in general use, unless they are sufficiently and distinctly explained in a separate page of the work in which they are used. It is quite out of the question to suppose that any one nomenclature of colours, differing from that which is in general use, should ever become universal; or that people will purchase a separate treatise upon that subject, in order that they may understand the terms used in another book. Even were all the colours of one tint, or, to speak more correctly, of one *depth*, the attempt at affixing names to every shade would be utterly hopeless: how much more so then is it, when every tint is capable of assuming an infinity of others, for which, if the principle is to be followed up, separate names should be assigned! I found this opinion upon experience; and upon repeated attempts to describe the colour of birds in such a way as to convey the highest degree

the body greyish white, with very fine zigzag lines of a darker shade: quills and tail plain greyish white: legs and toes ash-grey, with the membranes darker."

The Canvas-back Duck.

Fuligula Valisneria, *Bonap.* (*Fig.* 41.)

Anas Valisneria, Canvas-back Duck *Wilson*, viii. pl. 70. f. 3.
Fuligula Valesneria, *Bonap. Synop.* p. 392. *North. Zool.* ii 451.



The estimation in which this species is held, as an article of food, by our transatlantic brethren, is well

of precision. I procured Syme's *Nomenclature of Colours*, for this very object; but I found that, so far from enabling me to accomplish this object, I was perplexed at almost every step: and I soon discovered, that, if I attempted rigorously to define every tint, I must have invented three times the number of names there employed; and, finally, should have ended with making my descriptions so overburthened with new names, and new combinations of terms, that nobody would have understood them. However desirable, therefore, such a universal standard might be, I cannot but think it as chimerical as that all naturalists should adopt one uniform system of classification or of nomenclature in systematic or vernacular names. In describing colours, the happy art is to define them in such a way as to avoid the extremes of vagueness and of minuteness. I know of no one, who, in my estimation, succeeded more perfectly in this, than our late regretted friend, Dr. Leach. In the very useful *Entomologist's Compendium*, by Mr. Samuelle, which was written almost under his eye, he has given, under the head of Colour, the most admirable definitions of all those that are usually seen in the animal world, of any that I have yet met with; so much so, indeed, that if I was induced to subscribe implicitly to any one system of nomenclature, it would most assuredly be this: it is clear, without being novel; and precise, without being too refined; while the terms employed can be at once understood. Its great excellence, in fact, consists in defending those general terms which have long been in use, and with which every one is therefore acquainted; and in adding only such others, of a very decided nature, as are really necessary. I have long been in the habit of following this nomenclature myself, and I strongly recommend it to others.

known; so that we may fairly look upon it as the ortolan of the duck family, and the turtle of the swimming birds. "The canvas-back," says Wilson, "in the rich, juicy tenderness of its flesh, and its delicacy of flavour, stands unrivalled by the whole of its tribe in this, or perhaps any, quarter of the world. Those killed in the rivers of the Chesapeake are generally considered superior to all others; doubtless, from the great abundance of their favourite food, which these rivers produce. They not only grace, but dignify, the table; and their very name conveys, to the imagination of the eager epicure, the most exhilarating ideas. Hence, on such occasions, it has not been uncommon to pay from one to three dollars a pair for these ducks; and indeed, at such times, if they can, they must be had, whatever may be the price."

The canvas-back ducks arrive in the United States, from the North, about the middle of October, and resort to the numerous rivers of the Chesapeake Bay, where they winter; and beyond which, Wilson was not able to trace them. They are seldom found high up any of these rivers; but chiefly frequent that particular part of the tide water, where their favourite food (a certain grass-like plant) grows: the root of this is white, and has some resemblance to small celery; and it is upon this only that the ducks feed. Wherever this plant grows in abundance, the canvas-backs may be expected either to pay occasional visits, or to make it their permanent residence during the winter; they are not, in fact, found in any situation where this plant does not grow.

When the canvas-backs first arrive from the northward, they are very lean; but such are the nutritive qualities of their favourite food, that, by the end of November, they become in fine condition. Yet the *Valisneria* grass is not their only food; for they readily feed on grain, as the following anecdote shows:—Some few years since, a vessel loaded with wheat was wrecked near the entrance of Egg Harbour, and went to pieces. The wheat floated out in vast quantities; and the whole

surface of the bay was in a few days covered with ducks, of a kind altogether unknown to the people of the neighbourhood. The gunners collected from all quarters around; and were so successful, that 240 were shot in one day, and sold to the country people at twelve cents and a half each, without the feathers. The birds continued about the bay, however, for three weeks; during the greater part of which time the same destruction was going on. The gunners called them Sea-ducks, not knowing they were in reality canvas-backs, at that time on their way from the North, when this floating feast attracted their attention, and for a time arrested them. When the gunners of Egg Harbour discovered their mistake, in selling for twenty-five cents, what would have brought them four times that sum beyond their immediate neighbourhood, we can readily fancy their surprise and vexation.

The canvas-backs are excellent swimmers and divers; the latter quality being absolutely necessary for fishing, or rather pulling up by the roots, their favourite food. Sometimes they assemble in such multitudes as to cover several acres of the river; and when they suddenly rise, produce a noise resembling thunder. They are, however, extremely shy, and can rarely be approached except by stealth. When wounded in the wing, they dive to such prodigious distances, and with such rapidity and perseverance, as almost always to render the pursuit hopeless.

From the great demand for these birds, and the high price they uniformly bring in the market, various methods are practised to procure them. The most successful way is thought to be by decoying them to the shore by means of a dog, while the sportsman lies concealed. The dog, if properly trained, runs backwards and forwards along the margin of the water: the ducks, observing his manœuvres, and enticed perhaps by curiosity, gradually approach the shore, until they are sometimes within twenty or thirty yards of the spot where the sportsman lies in ambush; whence he opens upon them

a raking fire, first at those upon the water, and then as they arise. This method is called *tolling them in.* If the ducks seem difficult to decoy, any glaring object, such as a red handkerchief, is fastened on the dog; and this rarely fails to attract them. Another method is to shoot them by moonlight. For this purpose the sportsman directs his skiff towards a flock whose position he had previously ascertained, keeping within the projecting shade of some wood, tree, or bank. By proceeding in this manner, and paddling along with the least possible noise, he may frequently get within fifteen or twenty yards of a flock of some thousands, among which prodigious havoc may be made. But this wholesale slaughter of the poor birds, however productive it may be to the gunner for a short time, generally defeats his object in the long run; for if thus intimidated and destroyed in their places of rest, they will very soon abandon them altogether, and seek a more secure retreat.

During the day the ducks disperse and float about, diving after their much-loved roots; but towards evening, collecting into large flocks, they assemble at the mouths of creeks, where they sleep, as at anchor, with their heads under their wings: yet there are always sentinels awake, ready to give warning on the least appearance of danger. Even when feeding and diving in small parties, the whole never go down into the water at once, so that some always remain above to guard the others.

In severe winters, when the river is frozen, the canvas-backs retreat to its confluence with the bay; but here, again, they fall into the snare of the fowler. In such situations as produce their favourite grass, the gunners make air-holes in the ice, and then concealing themselves at a convenient distance, shoot the birds as they approach these holes to feed. An inhabitant of Herring Creek informed Wilson, that, one severe winter, he and another person broke a hole in the ice about twenty feet by forty, immediately over a shoal of grass, and both then took their station in a temporary hut, each having three guns well loaded with large shot. The ducks, which were

flying up and down the river in great distress for food, soon crowded to the spot, so that the whole open space in the ice was not only covered by them, but vast numbers stood around on the edge. The gunners fired three rounds in concert; after which they picked up eighty-eight birds, and might have collected more, had they been able to reach the wounded ones at the extremity of the ice. Wilson records an instance, not necessary to repeat in detail, where the roots of their favourite plant were nearly all torn up by the sudden rising of the tide after a thaw, from a spot which had always been one of the chief resorts of the birds: this accident, however, drove them away; for although a few of the ducks were seen the next winter, as if to reconnoitre their former haunt, they soon went away.

The colours of the male will now be described. The bill is glossy black; irides dark red: the cheeks and fore part of the head are blackish brown; but the rest of the head, and the greater part of the neck, is glossy reddish chestnut or rufous; this colour ends in a broad patch of black, which covers the upper part of the breast, and spreads round to the back: the upper plumage, including the back, scapulars, and tertials, are white, delicately marked with innumerable transverse waved lines, as if done with a pencil: the lower parts of the breast, and also the belly, are the same; but the lines are scarcely perceptible on the breast, although darker and thicker towards the vent: the wing covers are grey, with numerous specks of blackish: the quills are pale cinereous; but two or three of the tertials have a narrow edging of deep black: the tail is very short, pointed, and of a cinereous brown colour: vent and tail covers black: inner wing covers white: legs and feet cinereous. The male is two feet long.

The female is rather smaller; and is thus described by Wilson:—"Crown blackish brown: cheeks and throat of a pale drab: neck dull brown: breast, as far as the black extends on the male, dull brown, skirted in places with pale drab: back dusky white, crossed

with fine waving lines: belly of the same dull white, pencilled like the back: wings, feet, and bill as in the male: tail covers dusky: vent white, waved with brown."

Dr. Richardson, who killed this species early in May, on the banks of the Saskatchewan, observes, that it breeds in all parts of the fur countries, from the 50th parallel to their most northern limits; and that it associates on the water with the *Fuligula ferina, marilla*, and several of the freshwater ducks.

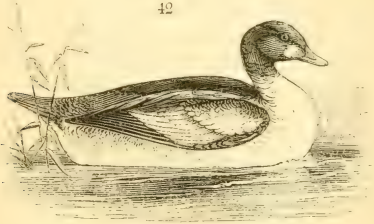
The Common or Golden-eye Garrot.

Clangula vulgaris, *Leach.* (*Fig.* 42.)

Male. — Clangula vulgaris, *Ill. of British Orn.* ii. 367. *North. Zool.* ii. 456. Anas clangula, *Linn., Auct., Wilson*, viii. pl. 67. *f.* 6. Canard Garrot, *Temminck, Man.* ii. 870. *Pl. Enl.* 802. Golden-eye Duck, of *Authors*, see *Montagu, Orn. Dict.*

Female. — Anas glaucion, *Linn., Auct.* Morillon, *Latham, Synop.* vi. 537. &c.

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The circumstance of having just witnessed this very handsome and interesting duck sporting and diving about, along with that part of the collection of living water-fowl turned out by the Ornithological Society on the canal in St. James's Park, sufficiently proves that it may be in some measure domesticated, and accustomed to such situations; although there may be but small hope of its ever being induced to breed in confinement.

It is a native both of Europe and North America; coming to us, as well as to the United States, only in winter; retiring northward in the spring, with the majority of the other ducks, to breed. Wilson seems to have known little or nothing of the manners of the American race; although he says it is a "well known" bird in various parts of the United States, both along the sea coast and about the lakes and rivers of the interior. In regard to its manners in this part of the world, we cannot have a better authority than Mr. Selby, whose two admirable volumes * are by far the best of all those which have hitherto appeared on our native ornithology: they are not, indeed, very sentimental, or remarkably poetical; but they give that solid information, which the ornithologist more especially wants. When in full plumage, Mr. Selby observes, "the male golden-eye, in this country, is rather of rare occurrence; the great body of those that visit our coasts being either females or young males, both of which are generally known by the name of *Morillons*, and as such were described by the old ornithologists as a distinct species. The number of this species which annually visit the British coast, is regulated by the severity or mildness of the season; being always most abundant under the former state of weather. This remark is equally applicable to all the northern *Anatidæ;* the extent of their migration southward being in proportion to the greater or less extent of those regions to the northward from which they have been frozen out of food. The golden-eye is usually seen in small flocks or societies, upon our lakes and larger rivers, and occasionally upon the coasts, near estuaries. It flies with great strength and rapidity, giving intimation of its approach by the whistling noise of its wings as its passes through the air. It is remarkably active on the water, swimming and diving with equal facility. From the quickness with which it plunges, and the distance to which it dives, it is very difficult to kill when

* Illustrations of British Ornithology, 2 vols. 8vo. Longman and Co.; sold separately from the folio Atlas of plates.

afloat; and the introduction of the detonating lock has alone given the water-fowl shooter any chance against it, as it constantly dived at the flash of the pan, and was fairly beneath the surface before the shot reached it. Upon the land it proceeds in a shuffling ungainly manner, from the backward position of the legs, and the great size of the feet. In summer it returns to the northern regions to breed. Dr. Richardson found the golden-eye in great numbers, throughout the fur countries, frequenting the rivers and freshwater lakes, where it is by no means shy; yet diving instantaneously at the flash of the gun, or the twanging of a bowstring.

The male, in adult plumage, has the head, and about two inches of the neck, of a brilliant duck green, broken only by a large round patch beneath the lores: the bill is black; and the irides are brilliant yellow, from which it has obtained the name of *Golden-eye*: all the under parts, from the neck downwards, are pure white: the greater wing covers, and part of the scapulars, are also of the same colour: the back, rump, the longest of the scapulars, the primary quills, the four outer secondaries, and the tertials are of a deep pitchy black: the flank feathers have deep black edges; and the tail and thighs are brown: the legs and toes are rich orange.

The female has all the head, and the *upper* part of the neck, deep brown; while the *lower* part, as also the belly and vent, are white: the breast and sides of the body are deep brown, edged with whitish: the feathers of the back and scapulars are blackish in the middle, edged and tipt with deep ash; the wing covers varied with white and black: the tip of the bill and the irides are yellowish, and the feet bright yellow. The young males of the year, as in all other birds, resemble the old females; but the irides are greenish, and the toes light or yellowish brown. At the age of one year, the conspicuous white spot at the side of the gape becomes apparent, and the feathers of the head and neck are black, but without any green gloss.

Barrow's or Rocky Mountain Garrot.

Clangula Barrovii, *Rich.* and *Sw.*

Head and upper part of the neck glossy purple, with a large crescent-shaped white mark before each eye: speculum of the wing white; separated from the band on the covers by a black stripe.

Clangula Barrovii, *Northern Zoology*, ii. pl. 70. p. 456.

Of this interesting species, — at present so rare in our collections, that only one specimen, we believe, is in England, — Dr. Richardson merely observes as to its manners, that they do not differ from those of the common golden-eye, although it has hitherto been found only in the valleys of the Rocky Mountains. Hence we may fairly conclude, that, like the *Clangula vulgaris*, it would, if introduced alive into this country, readily accommodate itself to the partial confinement of our aquatic preserves; and when we consider how many of our countrymen are located in, or near to, the regions it inhabits, we trust exertions will be used to accomplish its introduction.

Notwithstanding the general similarity in the form and markings of this bird and the common golden-eye, the difference in their bills would alone point them out to be distinct species. Exclusive of the specific differences above noted, the Rocky Mountain garrot is distinguished by the purer colour of its dorsal plumage, and the smaller portion of white on its wings and scapulars. Its long flank feathers are also much more broadly bordered all round with black: the bases of the greater covers in the golden-eye are black, but they are concealed, and do not form the black band so conspicuous in this. "The specific appellation is intended as a tribute to Mr. Barrow's* varied talents, and his unwearied exertions for the promotion of science."

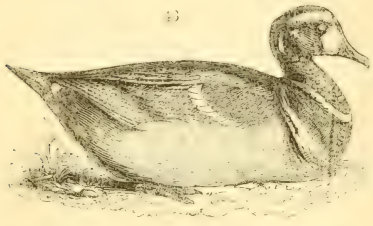
* Now sir John Barrow, bart.

The Harlequin Duck.

Clangula Histrionica, *Leach.* (*Fig.* 43.)

Blackish, with a narrow collar, broad pectoral bar, and three spots on the sides of the head, pure white: above the eyes a ferruginous stripe: flanks chestnut: mirror glossy black-blue, margined before and above with white.—*Male.*

Clangula Histrionica, *Rich. North. Zool.* ii. 459. *Selby*, ii. 370. Anas Histrionica, *Forster, Phil. Trans.* xiii. p. 429. *Pennant, Arctic Zool.* ii. 490. *Wilson,* viii. pl. 72. f. 4. *Sowerby's Brit. Miss.* pl. 6. Harlequin Duck, *Pennant, Latham,* &c. Dusky and spotted Duck, *Edwards*, pl. 97. female. Painted or Mountain Duck, *Hudson's Bay Residents.*



The natural habits of this elegant and very singularly marked species, as explained by Dr. Richardson, is in favour of our belief that it could, by proper management, and in favourable situations, be in some degree habituated to our menageries in the open air: this observing naturalist says, that "it haunts eddies under cascades and rapid streams; it takes wing at once when disturbed, and is very vigilant." We never saw it associating with any other duck, and (in the fur countries) it is a rare bird.

It seems to be equally scarce, according to Wilson, on the coasts of the Middle and Southern States, though not unfrequently found off those of New England,

where it is known by the dignified title of *Lord*,—probably from the elegant crescent and circles of white which ornament its neck and breast. Though an inhabitant of both continents, little else is known of its particular manners, than that it swims and dives well, flies swiftly and to a great height, and has a whistling note. It is said to frequent the small rivulets inland from Hudson's Bay, where it breeds. The female lays ten white eggs on the grass: the young are prettily speckled. It is here called the *Painted Duck;* and at Newfoundland, as well as on the coast of New England, the *Lord*. Wilson, on what authority we know not, adds, that "it is often seen in deep water considerably out at sea." According to Latham and Pennant (both very dubious authorities in all cases where *locality* is concerned), it is found in Europe as far as Lake Baikal, and thence to Kamtschatka, particularly up the River Ochotska; and was also met with at Avonalaska, and in Iceland. Wilson adds,—"The few specimens of this duck which I have met with, were all males; and from the variation in their colours, it appears evident that the young birds undergo a considerable change of plumage, before they arrive at their full colours. In some, the white spot behind the eye was large, extending irregularly half way down the neck; in others, confined to a roundish spot. The flesh is said to be excellent." Mr. Selby remarks, that "this is one of our rarest winter visitants, the (known) instances of its capture being confined to three or four, all of which occurred in the northern parts of Scotland."* The two sexes figured by Sowerby†, were from that country; and he mentions that another (a young female) had been shot in one of the Orkney Islands.

The colour of the male is so singularly diversified, as to require much precision in a description which is to convey any accurate idea of the bird. We should say that the ground colour of the whole plumage, both above

* Selby, Ill. Brit. Orn. ii. 370. † British Miss. i. pl. 6.

and below, is bluish black,—of different tints, indeed, but in all parts dark; upon this ground are many bold bands, stripes, and spots of white, giving the bird a most elegant appearance. A large patch of this sort fills up the side of the head between the eye and bill; another small and round one is just on the ear; and a third, longer and narrower, is behind it: the crown is margined on each side by a stripe of white, which changes to ferruginous after it passes the eye: at the bottom of the neck is a narrow white collar, which separates the deep black of the head and throat from the cinereous or lavender-black of the breast: on each side of the breast is a very broad transverse stripe of white, margined above and below by a very narrow one of velvet-black: the greater wing covers terminate in a white bar, and the outer edges of the tertials are marked with black and white stripes; the speculum, which covers all the secondary quills, is of a very dark glossy blue: sides of the body and flanks chestnut brown: vent, rump, and tail covers velvet-black: at the base of the tail, on each side, is a white spot: the bill is bluish black, and the legs dark brown: quills and tail brownish.

The female, which we have not seen, is thus described by Dr. Richardson *: — "Above, dark liver-brown: the quills and tail blackish brown: the rump, and the flank feathers that hang down over the thigh, pale umber: a spot behind the ears, a smaller one on each side of the forehead, and some mottling under the eye, white: upper part of the breast, and the sides, under the wings, yellowish brown, edged with brownish grey: rest of the under plumage greyish white, broadly barred across the middle of each feather with clove-brown. The size is much inferior to that of the male."

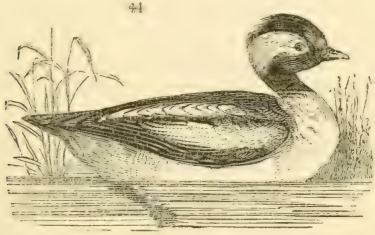
* North. Zool. ii. 459.

The Buffel-headed or Spirit Garrot.

Clangula albeola, *Leach*. (*Fig.* 44.)

Head and neck black, richly glossed with green and purple; the feathers very full and silky: body white, with the back and quills black. Female with a white spot on the ears and wings.

Clangula albeata, *Leach*, in *Gen. Zool.* xii. ii. 183. *Northern Zool.* ii. 458. Anas albeola, *Linn.*, *Auct.*, *Wilson*, viii. pl. 67. f. 2. male, 3. female. *Pennant*, *Arct. Zool.* ii. 558. Anas bucephala, *Linn.*, *Auct.*, *Pennant*, *Arct. Zool.* ii. 559. Buffel-head Duck, *Wilson*, *Catesby*, *Pennant*, *Latham*, &c. Little Brown Duck, *Catesby*, *Latham*, &c. (the female). Sarcelle blanche et noir, *Buffon*, *Pl. Enl.* 948. male. Little Black and white Duck, *Edwards*, pl. 100. male.



As there is evidence to show that the food and economy of this pretty little duck are essentially the same as those of the common golden-eye, there appears no reason to doubt that it might be as much domesticated on our water inclosures as that is. Both breed in the same regions; but, in their southward migrations, this species appears to confine its range entirely to the American continent.

During autumn and winter, this pretty duck is to be met with in all parts of the United States, enlivening the sea shores, rivers, and lakes; diving with the greatest dexterity, and flying with extraordinary velocity. So early as the latter part of February, the males are

observed to have violent disputes for the females. At this time they are more commonly seen in flocks; but during the preceding part of the winter they usually fly in pairs. Their note, as Wilson observes, is a short *quak*. It extends its migrations southward as far as Carolina; and is found on the ponds and fresh waters of Georgia; but it is not common there. Mr. Hutchins says that it appears at Hudson's Bay, on the banks of the Severn River, in June, and builds its nest in trees in the woods, near ponds. According to Dr. Richardson, it frequents the rivers and freshwater lakes throughout the fur countries in great numbers. Their instantaneous mode of diving on seeing the flash of a gun, has induced the Indians to believe they are endowed with some supernatural power; hence their appellation of "Conjuring," or Spirit Duck. *Buffel-headed*, as Wilson observes, is only a corruption of *buffalo*-headed, in allusion to the disproportionate size of its head; a character, however, which is also apparent, though in a less degree, in the golden-eye, and all the garrots.* About the middle of April, or early in May, this species leaves the United States for their breeding places in the North. The specimen described in the *Northern Zoology*, was killed on the banks of the Saskatchewan in the month of May.

The plumage of the male may be thus described: — The feathers of the head, and half of the neck, are thick, long, and silky; richly glossed with green on the forehead and nape, but which changes to a shining purple on the crown and sides of the neck: in some particular lights, these have a rich lilac or flame-coloured gloss. Behind the eye commences a broad band of pure white, which terminates with the occipital crest formed by the lengthened silky feathers of the head: irides dark: the back, wings, and part of the scapulars are black; the rest of the scapulars, lateral band along the wing, and the whole of the under plumage, pure white;

* A large head, as we have frequently observed, is one of the most typical distinctions of the aquatic type of all animals.

rather greyish on the vent and under tail covers: tail brown; the covers greyish black.

The female is considerably smaller, and the head is not so full of feathers. The head, neck, upper parts of the body, and the wings are sooty black, darkest on the crown: the sides of the head are marked with a small oblong spot of white: the lower part of the neck is grey, the feathers being tipt with white: belly dull white; but the the vent is cinereous: the outer webs of six of the secondaries, and the tertials, are white; but the tips of the latter are black: tail cinereous brown: bill and feet brownish. The male measures sixteen inches in length, but the female only fourteen and a half.

The Pink-headed Duck.

Anas caryophyllacea, *Latham.*

Brown both above and beneath: head and part of the neck pink: spot on the wings pale red or rufous.

Anas caryophyllacea, *Latham, Index Ornith.* ii. 866. Pink-headed Duck, *Gen. Synop. Supp.* 276. *Gen. Hist.* x. 343.

Notwithstanding the number of years that has elapsed since this remarkable species was first mentioned in the *Synopsis* of Dr. Latham, we have never heard of a specimen being in this country, either alive or dead. If, however, the information given to the doctor, and here inserted, is correct, there seems no reason to doubt that it might become an inhabitant of our menageries; for, being found in the interior of India, we may presume it is a freshwater species. A brown duck, with a pink-coloured head, is a cast of colouring so peculiar, that its possession is most desirable. Dr. Latham's account of it is as follows; — but whether it is a duck or a goose, or of what modern genus it belongs to, remains for future discovery.

"Size of the black-winged whistling duck: length twenty or twenty-one inches; bill two inches and a half long, a trifle bent at the point. Colour pale red,

with the base and point pink, and, in some subjects, mottled with black: head and half the neck pink; the feathers short and downy: irides red: the general colour of the rest of the plumage deep chocolate brown, with a tinge of pink throughout the whole: wings paler brown; the outer edges of three or four of the quills pale red, giving the appearance of a speculum; bend of the wing white, with some of the lower covers curving downwards at the ends, as in the male of the western duck: tail about two inches long, darker than the quills, which reach to about two thirds of the length: legs pale reddish brown, or blue grey; the webs dark. The adult female is said not to differ from the male, except in the plumage being less brilliant; and, according to some drawings, none of the wing covers curve downwards.

Inhabits various parts of India; most frequent in the province of Oude: is rarely seen in flocks, for the most part only two being found together: is often kept tame, and becomes tolerably familiar."

The Pelican.

Pelecanus Onocrotalus, *Linn.*

Linn. Syst. Nat. i. 215. *Auct.* Pelican blanc, *Temm. Man.* ii. 891. White Pelican, *Edwards, Gleanings*, pl. 93.

The pelican is such a well-known bird, and its description occupies such a prominent place in all natural histories of birds, even the most elementary, that we shall chiefly confine our remarks to a few of those particulars only which regards its manners, whether in a wild or a domesticated state. Pelicans are among the most common birds seen in menageries, and are distributed over all the temperate regions of the world; but there seems reason to believe that, under this general name, several species, inhabiting different regions, will hereafter be detected. Those described by Mr. Bennett, as then in the Tower menagerie, were of a very light and delicate flesh-colour, varied only by occasional darker tinges, but with the

quill feathers black: they were said to have been brought from Hungary; a fact we are very much disposed to question, since it is highly improbable that such a perfectly aquatic and almost maritime bird should inhabit the heart of Central Europe; more especially, as it is so rare on the warmer shores of Sicily and Italy, that, although we were told it had been seen there, we never could procure a specimen during a residence of six years. At the time Mr. Bennett wrote, "the female was there sitting upon three eggs, and had built herself a very perfect nest. Should these be brought to maturity," he continues, "as there is every reason to suspect, they will probably be the first that were ever hatched in England. She never quits her charge; but is fed by the male, who crams his pouch with double his usual allowance, and then proceeds to shovel her fair share into his partner's throat. It is in this manner, also, that the young are fed; the old bird pressing his full pouch against his chest, and contriving thus to disgorge a portion of its contents; an action which has, no doubt, given rise to the fabulous notion of the pelican feeding its young with its own blood: in fact, its appearance in this attitude, with the bloody spot at the end of the bill, closely pressed against the delicate plumage of the breast, may readily account for the prevalence of such an idea in the minds of superficial observers.*

The quantity of fish necessary to keep a pair of these birds is enormous; the above two requiring no less than six dozen of small live plaice every day,—a supply which it would be sometimes difficult to procure: so that although a pair might be retained as specimens of fish devourers, their increase would not be very desirable; while it is obvious that they would be altogether unsuited to canals or other artificial waters, thinly stocked with their living food.

The following authentic account of its manners in a state of nature, has been given by Dr. Richardson †:—

* Tower Menagerie, 230. † North. Zool. ii. 472.

"Pelicans are numerous in the interior of the fur countries up to the 61st parallel; but they seldom come within 200 miles of Hudson's Bay. They usually deposit their eggs on small rocky islands, on the brink of cascades, where they can scarcely be approached; but they are otherwise by no means shy birds. They fly low and heavily, usually in flocks of from six to fourteen, sometimes abreast, at other times in an oblique line; and they often pass close over a building, or within a few yards of a party of men, without exhibiting any signs of fear: they haunt eddies under waterfalls, and devour great quantities of carp and other fish. When gorged with food, they dose on the water, and may be easily captured, as they have great difficulty in taking wing at such times, particularly if their pouches be loaded with fish. Though they can perch on trees, they are most generally seen either on the wing or swimming. Some specimens, apparently in mature plumage, have the bill quite smooth above; but some individuals have a long, thin, bony process, about two inches high, springing from the ridge of the upper mandible: similar processes existed in the specimens alluded to by Pennant and Forster, which were brought from Hudson's Bay; but no such appearances have been described as occurring on the bills of the white pelicans of the Old Continent."

The description of an American pelican, killed on the Mississippi, in lat. 56°, is as follows:—The general colour is white, tinged with peach-blossom red, except the breast, which is yellowish; while the spurious quills and primaries are deep black: the bill is bluish, with the margins and tip of the upper mandible reddish: the feet, the naked orbits, and the base of the upper mandible are all flesh-coloured; the pouch being yellow: the hind head is crested, but the neck is covered with down. The total length is about six feet: the second quill is the longest, and the first considerably exceeds the fifth: the middle nail is entire.

PART III.

TWO CENTENARIES AND A QUARTER OF BIRDS, EITHER NEW, OR HITHERTO IMPERFECTLY DESCRIBED.*

1. Falco *gracilis*.

Top of the head and wing covers cinereous; the latter marked with black spots: tail rufous, crossed before the tip with a band of black: outer feather white, with six black bands on the inner web: body, beneath, white, with black spots.

Inhabits Brazil: shot in the province of Bahia.

Differs from *Falco sparverius* in having six distinct black bands on the outer tail feather, instead of only one, besides the terminal band; there is also no rufous on the crown.

2. Falco *cinnamominus*.

Head and wing covers cinereous; the latter with black spots: all the tail feathers entirely rufous, with one black band before the tip: bands on the scapulars, and spots on the body beneath, black.

Inhabits Chili. Mr. W. J. Hooker's collection.

Size of *Falco sparverius:* differs in having no rufous on the crown; in the tips of the tail being rufous instead of white; and in having no second band on the outer tail feather, which is rufous instead of white. It seems intermediate between *sparverius* and *gracilis*, more resembling the first in the strength and size of the black spots and bands on the upper plumage, and those on the wing covers.

3. Falco *isabellinus*.

Male.—Top of the head and wing covers cinereous, without spots: tail rufous, with a black bar before the tip; external web of the outer feather pure white: breast, and body beneath, isabella, unspotted.

* As this part is referred to in the Second Volume of the *Classification of Birds*, under the designation of Part V. of that volume, it is recommended to be bound up with it.

Female.—Above, rufous, banded with black ; beneath, whitish, striped with brown on the breast and body : crown cinereous : middle tail feathers with ten black bars.

Young male.—Crown with a rufous spot : outer tail feather with one or two internal black bars.

Inhabits Demerara. Mr. Schombergh.

Three males and two females agreed in the above characters. The male measures $10\frac{1}{4}$ inches ; bill, gape $\frac{6}{10}$; wings $6\frac{3}{10}$; tail, beyond, $1\frac{2}{10}$; ditto, base 5 ; tarsus $1\frac{2}{10}$.

Note. — The above three species have been probably overlooked, as varieties of the North American *sparverius*, which seems to represent rather a section of the genus, than to be the type of a species.

4. Accipiter *sexfasciatus*.

Above, blackish brown ; beneath, white : crown and nape, deep black : the feathers with their base white : tail, beneath, black, with six entire white bars : thighs and inner wing covers pale ferruginous.

Inhabits Guiana. Mr. Schombergh.

Total length 17 inches ; wings 9, reaching to the upper covers ; tail, beyond, $5\frac{1}{2}$; do. base $8\frac{1}{2}$; tarsus $2\frac{3}{10}$.— *Obs.* Form typical : tail slightly rounded ; the tips of the feathers pointed and crossed by the sixth band ; the other bands are dusky above, but very white and regularly marked beneath ; fourth quill longest, with seven white bands on the inner web.

5. Chætoblemma *leucocephala*.

Front and upper part of the head pure white : ears and sides brownish black : body above, wings, and tail, brown, immaculate : under plumage white.

Inhabits South Africa. Dr. Burchell's Coll. No. 270.

Size large, total length about $9\frac{1}{2}$ inches ; bill, from the gape 1 ; ditto, front $\frac{6}{10}$; wings $5\frac{6}{10}$; tail, beyond, about $1\frac{1}{4}$; base $4\frac{1}{2}$; tarsus 1 ; hind toe and claw $\frac{1}{10}$.

6. Telophonus *longirostris*.

Above, brown ; beneath, cinereous : chin, ears, and stripe above the eye, whitish : ears margined above by a black line. Bill much lengthened, and slightly curved.

Inhabits South Africa. Dr. Burchell's Coll. 423. 369.

Total length about $8\frac{1}{2}$ inches; bill, from the front $\frac{6}{10}$; from the gape $1\frac{2}{10}$; wings 3; tail, from the base 4. Size and habit of *T. erythropterus*; but the bill is longer, much more slender, and is slightly curved.

7. Thamnophilus *pectoralis*.

Above, grey brown; beneath, whitish: wings rufous: crown of the head, black in the male, rufous in the female: breast and lower part of the throat crossed by transverse black lines: tail rounded, black, banded with white.

Inhabits the forests of Bahia, Brazil. Mus. Nost.

Rather smaller than *T. niveacus*. Total length $5\frac{3}{4}$ inches; bill, front $1\frac{3}{20}$; wings $2\frac{3}{10}$; tail, beyond, $1\frac{7}{10}$; base $2\frac{1}{2}$; tarsus, 1; middle toe and claw hardly $\frac{8}{10}$. The grey of the upper plumage is tinged with rufous, which is bright only on the wings. The transverse lines on the throat and breast readily distinguish this species: the chin, like the body, is white.

8. Colluricincla *strigata*.

Above, grey; beneath, pure white, with a grey line down the middle of each feather: stripe above the eye, and round the ear, ferruginous.

Inhabits Tasmania. Mus. Nost.

Size of *C. cinerea*. Total length $8\frac{1}{2}$ inches; bill, gape $1\frac{3}{10}$; wings $4\frac{6}{10}$; tail, beyond, $1\frac{7}{10}$; base 4; tarsus $1\frac{3}{10}$. Bill deep black: legs brown: margins of the greater covers, spurious quills, and lesser quills, strongly tinged with rufous: lores, ears, sides of the neck, breast, and body, cinereous: inner wing covers pure white: the ferruginous stripe above the eye commences at the nostrils, and joins another, which margins the ear feathers: rump and tail pure cinereous.

9. Tephrodornis *superciliosus*.

Above, light cinereous grey: stripe above the eye, band on the rump, and two lateral tail feathers, white: ears and upper tail covers blackish.

Inhabits Java. Mus. Nost.

Total length $6\frac{1}{4}$ inches; bill, front $\frac{6}{10}$; gape $\frac{9}{10}$; wings $3\frac{2}{10}$; tail, beyond, $1\frac{2}{10}$; base $2\frac{1}{2}$; tarsus $\frac{2}{10}$. Stripe above the

eye very broad: lores grey, ears blackish: tail even; upper tail covers, and some of the lateral tail feathers, black; the rest brown; the two outer pair pure white, but black at their base, and marked with a brown spot on their outside tips: under plumage white, tinged with grey on the breast.

10. TEPHRODORNIS *hirundinaceus*.

Above, black, glossed with blue; beneath, white: front destitute of lengthened incumbent bristles: band on the rump, and borders of the outermost tail feather, white.

Inhabits Java. Mus. Nost. *Mus. hirundinacea*, Pl. Col. pl. 119.

Total length $4\frac{1}{2}$ inches; bill, front $\frac{4}{10}$ to $\frac{5}{10}$; gape $\frac{7}{10}$; wings 2; tail, beyond, 1; base $1\frac{8}{10}$; tarsus $\frac{4}{10}$. I have found it necessary to draw up a specific character for this species, as I have reason to know that the female has been confounded with *T. superciliosus*, notwithstanding the great difference in their size: the outermost tail feather is deep black, bordered all round with white.

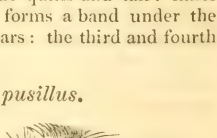
11. ANALCIPUS *hirundinaceus*.

Above, black, glossed with blue green: band on the rump, and all the under plumage, pure white.

Inhabits India. Mus. Nost.

Total length 6 inches; bill, gape $\frac{8}{10}$; front $\frac{13}{20}$; wings $3\frac{8}{10}$; tail, beyond, $\frac{2}{10}$; from the base 2; tarsus $\frac{13}{20}$. Bill cinereous, the margins whitish: the whole of the upper plumage glossed with bluish green; the blue tint predominating on the head, but there is little or none on the quills and tail: inner wing covers deep black: the black forms a band under the eye, and covers the upper half of the ears: the third and fourth quills equal and longest.

12. SAUROPHAGUS *pusillus*.


45

Colours of *Saurophagus sulphuratus;* but all the yellow crest feathers tipt with black. Total length, six inches and a half. (*fig.* 45.)

Inhabits Brazil and Guiana; but very rare in the former.

Total length $6\frac{1}{2}$ inches; bill, front $\frac{7}{10}$; ditto, gape 1; wings $3\frac{4}{10}$;

tail, beyond, $1\frac{8}{10}$; ditto, base $3\frac{2}{10}$; tarsus $\frac{6}{10}$. Notwithstanding the remarkable difference in size between this delicate little species and the robust *S. sulphuratus*, their colours are so exactly alike, that I can only detect the trivial variation in the crest, as mentioned above.

13. Megastoma *flaviceps*.

Above, olive brown; beneath, fine yellow: chin, and circle round the crown, white: crown and ears blackish, with a concealed crest of fine yellow.

Inhabits Northern Brazil.

Total length 9 inches; bill, gape $1\frac{5}{10}$; front $1\frac{2}{10}$; wings $4\frac{7}{10}$; tail, beyond, $1\frac{1}{2}$; base 4; tarsus $\frac{7}{10}$. This is, probably, the *Lanius pitanga* of Linnæan authors.

14. Megastoma *ruficeps*.

Colour resembling *M. flaviceps*; but the concealed crest is rufous, and the body beneath, orange yellow.

Inhabits Southern Brazil. Mus. Nost.

Total length $8\frac{1}{2}$ inches; bill $1\frac{7}{10}$; gape $1\frac{6}{10}$; front $1\frac{3}{20}$; wings $4\frac{2}{10}$; tail, beyond, 2; base $3\frac{3}{10}$; tarsus $\frac{6}{10}$.

15. Megastoma *atriceps*.

Colour resembling *M. flaviceps*; but the crown is entirely blackish. Bill, $1\frac{4}{10}$ inch long.

Inhabits Brazil. Mus. Nost.

Bill equally wide, but much shorter than in the two preceding. Total length 8 inches; wings $4\frac{5}{10}$; bill, gape $1\frac{4}{10}$; front 1; tail, base $3\frac{6}{10}$; tarsus $\frac{14}{20}$. I suspect this group to be analogous to *Psaris* in the uniformity of the colours which pervade the species.

16. Ptilogonys *nitens*.

Glossy blue black (in the female grey) above and beneath: head with a pointed crest: quills with a central white band on their inner webs.

Inhabits Mexico. Mus. Nost.

Total length about $7\frac{3}{4}$ inches; bill, front $\frac{4}{10}$; wings $4\frac{2}{10}$; tail, beyond, 2; base 4; tarsus $\frac{14}{20}$. The black colour of the male is uniform and glossy throughout the whole plumage: the feathers of the crest are very narrow and conspicuous: the female is uniform dark grey, with the crest alone blackish.

17. Psaris *Guianensis.*

Cinereous white: head, ears, chin spot, wings, and tail, black: orbits naked: bill red, tipt with black. Female with black stripes. Length of the wing, $4\frac{3}{4}$ inches.

Inhabits the interior of Guiana. Mr. Schombergh.

Differs from *P. Cayenensis*, in having the orbits red and naked. Total length 8 inches; bill, gape $1\frac{3}{10}$; from the front 1; wings $4\frac{3}{5}$; tail, base 3. The female is coloured like the male, with the addition of a large blackish brown spot in the middle of the back feathers, and a narrow stripe on those of the chin, throat, breast, and part of the body: the black hardly occupies the outer half of the bill.

18. Psaris *Braziliensis.*

Cinereous white: head, ears, chin spot, wings, and tail, black: orbits, naked: bill black, the marginal base red. Female with the head, ears, and back, dark cinereous, striped with blackish: length of the wing, above five inches.

Inhabits Northern Brazil.

Differs from *Cayenensis* in having the orbits red and naked; and from *Guinensis* in being larger, in the bill being entirely black beyond the nostrils, and in the female being without a black hood on the head and ears, as in that species. It is the largest and commonest of Brazil.

19. Psaris *Natterii.*

Cinereous white: head, ears, wings, and tail, black: chin without a black spot: bill black: orbits feathered. Wings $4\frac{1}{2}$ inches long: spurious quill falcate: first quill much longer than the fifth.

Inhabits Southern (?) Brazil.

Size of *P. Jardinii*, but the spurious quill, situated between the first and second, is very conspicuous, while in the latter it is totally wanting. I dedicate this new species to my friend, Dr. Natterer, whose ornithological researches in Brazil, and whose scientific knowledge, justly entitle him to this mark of public distinction and of private regard.

20. Psaris *Selbii.*

Cinereous white: head, ears, wings, and tail, black: chin without a black spot: bill black: orbits feathered.

Wings four inches: spurious quill half the length of the second.

Inhabits Southern Brazil. Mus. Nost.

The smallest of the black-caped species yet discovered, being much inferior to size to *P. erythrogenys*. Total length about $6\frac{1}{4}$ inches; bill, gape $1\frac{1}{10}$; ditto, front $\frac{7}{10}$; wings 4; tail, base $2\frac{1}{2}$; tarsus $\frac{7}{10}$. First quill intermediate in length between the fourth and fifth perfect quills. The slight characters which I originally gave of this species had better be cancelled for the foregoing.

21. Psaris *strigatus*.

Grey: beneath, dusky ferruginous: head blackish: wings with a broad longitudinal stripe of rufous. Spurious quill broad, hatchet-shaped.

Inhabits Brazil. Mus. Paris.

Total length 7 inches; bill, from the gape $\frac{17}{20}$; ditto from the nostrils $\frac{6}{10}$; wings $3\frac{7}{10}$; tail, base $2\frac{7}{10}$; ditto, beyond the wings $1\frac{1}{2}$; tarsus $\frac{8}{10}$: spurious quill hatchet-shaped. Closely related to *Psaris cristatus* *, but distinguished, at first sight, from that by the broad *longitudinal* stripe of ferruginous or rufous, which passes over part of the wing covers and the middle portion of the latter quills: rump and upper tail covers grey, tinged with rufous: all the under parts pale ferruginous, deepest on the under tail covers; inner wing covers the same: base of the inner web of the quills with a white spot, and a very small concealed one at the base of the shoulders, as in *P. cristatus*. Both these birds are links of connection between *Psaris* and *Pachyrynchus*.

22. Pachyrynchus *megacephalus*.

Head very large: plumage, above, cinereous; beneath, whitish: crown of the head glossy black: wings brown; quills rufous: ears, and inner web of the tail feathers, fulvous brown. Wings rather short, rounded: no spurious quill.

Inhabits Brazil. Mus. Nost.

Total length $7\frac{1}{2}$ inches; bill, from the front $\frac{6}{10}$; ditto, gape 1; wings 4; tail, beyond, $1\frac{1}{2}$; from the base 3; tarsus $\frac{9}{10}$. Head very large, crested: bill small, strong, and nearly as high on the sides as it is broad above; so that it deviates more from the typical species than any I have yet seen: crown and nape glossy black: upper plumage cinereous; but the whole of

* Zool. Ill. ii. pl. 41.

the wings and the sides of the tail feathers have a rufous brown tinge, which also extends to the ears and the inner wing covers: outer webs and margin of the inner webs of the quills rufous: tail rounded.

23. Pachyrynchus *Swainsonii*. Jardine and Selby.*

Above, olive; beneath, yellowish: head subcrested, ferrugineous in the male, olive in the female: wings and tail black, with all the feathers more or less tipt or margined with ferrugineous: eyes encircled with a white ring: no spurious quill.

Inhabits the forests of Eastern Brazil. Mus. Nost.

As the male only of this interesting species was known to the authors who have done me the honour of attaching my name to it, I have here indicated the female: the spurious quill is wanting in both sexes. Its size and dimensions are those of *P. Cuvieri*, of which *Vieilloti* Jardine and Selby seems to be the female.

24. Pachyrynchus *ruficeps*.

Rufous chestnut: paler beneath: crown of the head darker, sub-crested, and encircled, except in front, with a cinereous band. Tail rather lengthened, graduated: no spurious quill.

Inhabits Brazil. *Pachy. rufiscens?* Spix. pl. 46. f. 2.

Total length 6½ inches; bill, gape $\frac{7}{10}$; ditto, front $\frac{4}{5}$; wings 3; second and fifth equal; the four middle tail feathers equal, the rest graduated; tarsi $\frac{13}{20}$. Ears pale chestnut like the throat. The cinereous band commences at the lores, passes over the eye, and thus isolates the dark rufous of the crown from the side of the head.

25. Pachyrynchus *pectoralis*.

Above, black, glossed with bluish; beneath, dark cinereous: wings ferrugineous: throat with a rose-coloured spot: no spurious quill.

Inhabits Cayenne. Mus. Paris. *Querula minor* Lesson, Traité d'Orn. 363.

Size rather larger than *P. Cuvieri*. Total length about 7 inches; bill, from the gape $\frac{17}{20}$; ditto, from the nostrils $\frac{4}{5}$; wings $3\frac{6}{10}$; tarsus $\frac{7}{10}$. Typical in form, although aberrant in

* Illust. of Orn. ii. Appendix.

its colours. Lateral toe united to the first joint of the middle toe.

26. Pachyrynchus *leucogaster*.

Above, cinereous, tinged with olive: beneath, white: crown black, subcrested: wings and tail grey, with white margins: edge of the shoulders, and under wing covers, fulvous or buff yellow: no spurious quill.

Inhabits Brazil. Mus. Paris.

Size of *P. niger*, from which it further differs in having a shorter and less rounded tail, with the feathers more narrow and pointed. The chin, throat, and middle of the belly are pure white, the breast alone being tinged with grey: the back is tinged here and there with olive.

27. Pachyrynchus *albifrons*.

Above, cinereous; beneath, whitish: crown glossy black, subcrested: wings and tail margined and tipt with white: frontal band, and circle round the eye, pure white. Spurious quill more than half the length of the first.

Inhabits Brazil. Mus. Nost.

Size of the last, from which it further differs in having the whole of the under plumage of a uniform light grey or pearly white. Nape, ears, lower back, rump, and tail covers clear cinereous: interscapulars varied with black: wings and tail deep black, the feathers of the former are margined, those of the latter broadly tipt with white: a narrow white line passes on the front, and unites to the white ring round the eye. All the tail feathers grey at their outer base.

28. Pachyrynchus *Spixii*.

Male.—Above, black, with the rump and tail covers cinereous: beneath, entirely cinereous: crown glossy steel-black: wings and tail, black, margined and tipt with white: spurious quill between the first and second.

Female.—Above, pale olive, where the male is grey: lesser wing covers, and scapular quills, edged with yellowish white: greater wing covers, and lesser quills, edged with ochraceous: under plumage greyish white, tinged with yellow: no spurious quill.

Inhabits Brazil? Mus. Paris. Nob.

Crown glossy steel-black, changing to unglossed black on the nape, neck, and interscapulars; from whence to the base of the tail feathers the colour is dark cinereous: all the under parts pure uniform cinereous, rather paler than the rump: bill short, broad.

29. Pachyrynchus *niger*.

Sooty black both above and beneath: crown glossy steel-black: wings and tail black, margined and tipt with white. Spurious quill half as long as the second: bill rather narrow.

Inhabits Brazil. Mus. Nost.

Size of the last, from which it is at once distinguished by the under plumage being almost as black as the upper. Although, in a young state, the under parts are dark cinereous, yet they are never so light as in my *Spixii*. The white markings on the wings and tail of the last four species are all the same, and their general similarity of plumage is analogous to that which belongs to *Psaris Brasilienses* and its allies.

30. Oriolus *Hodsonii*.*

Yellow, with a black hood over the head and neck: quills yellow edged, and tipt with white: all the tail feathers with a central black band. Wings less than five inches long: tail short.

Inhabits Nepal.

Resembling *Oriolus melanocephalus* of India; but much smaller, and the tips of the quills are white instead of yellow: middle feathers of the tail yellow, with a black bar nearly across their centre. Total length about 7 inches; bill, from the gape 1; front $\frac{8}{10}$; wings $4\frac{8}{10}$; tail, beyond, $\frac{7}{10}$; tarsus $\frac{7}{10}$.

31. Crateropus *rufifrons*.

Fulvous brown above and beneath: throat and breast paler: front and lores bright rufous: inner wing covers, and under parts of the quills, cinnamon.

Inhabits India? Mus. Nost.

Total length $10\frac{1}{2}$ inches; bill, gape $1\frac{1}{10}$; ditto, front $\frac{7}{10}$;

* The eminent services which Mr. Hodgson has rendered to science during his long residence at the court of Nepal, both by describing several of the new animals of that country, and by transmitting to Europe large and valuable collections of specimens, justly entitles him to the honour of having one of the many new species, thus discovered, recorded by his name.

wings 5; tail, beyond, $2\frac{3}{4}$; ditto, base 5; tarsus $1\frac{7}{10}$; hind toe and claw 1. General colour drab brown, nearly as dark on the body beneath as on the back: the front of the chin and throat is lighter, almost isabella brown, gradually deepening downwards to the colour of the body: tail and wings like the back, the former broad and much rounded; quills very broad, the basal half of all the primaries, and also the inner covers, rufous or cinnamon; a small spot of the same is on the tip of the chin. bill short, straight, and rather thick. Sixth and seventh quill longest: lateral claws almost even.

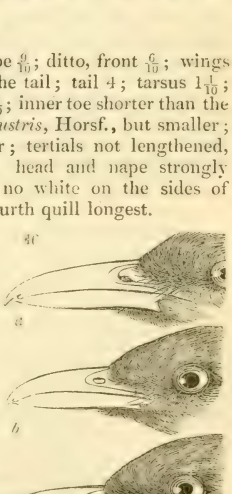
32. MEGALURUS *isabellinus*.

Light brown, striped with blackish above: isabella beneath: middle of the throat and breast white: tail and wings with transverse dark shades: bill and feet pale.

Inhabits India. Mus. Nost.

Total length $8\frac{1}{2}$ inches; bill, gape $\frac{9}{10}$; ditto, front $\frac{6}{10}$; wings $2\frac{7}{10}$, reaching only to the base of the tail; tail 4; tarsus $1\frac{1}{10}$; hind toe and claw $\frac{6}{10}$; middle ditto $\frac{9}{10}$; inner toe shorter than the outer. Form and habit of *Meg. palustris*, Horsf., but smaller; the tail narrower; the wings shorter; tertials not lengthened, nor edged with any light colour; head and nape strongly striated with black; belly white; no white on the sides of the head; wings very short; the fourth quill longest.

33. GRYLLIVORA *magnirostra*.



Glossy black: body beneath, stripe on the wings, and the four external pair of the tail feathers pure white. Bill large, thick; the culmen straight, and the tip much hooked. (*fig.* 46. *a*)

Inhabits India? Mus. Nost.

Total length 8 inches; bill, front $\frac{7}{10}$; wings $3\frac{7}{10}$; tail, beyond, $1\frac{1}{2}$; base 4; tarsus $1\frac{1}{10}$; middle toe and claw 1.

34. GRYLLIVORA *intermedia*.

Glossy black: body beneath, stripe on the wings

and the four outer pair of tail feathers, pure white: bill moderate; culmen arched from the nostrils.—Female? dark glossy cinereous above: the throat and breast, grey: chin and sides of the head tinged with rufous. (*fig.* 46. *b.*)

Inhabits India. Mus. Nost.

Total length 8½ inches; bill, front $1\frac{1}{20}$; wings $3\frac{8}{10}$; tail, beyond, $2\frac{1}{4}$; base $3\frac{3}{4}$; tarsus $1\frac{1}{10}$; middle toe and claw $\frac{8}{10}$. This and the last species are coloured precisely alike, but the difference in their bills is so great, that I am disposed to consider them distinct, more especially in reference to the next.

35. Gryllivora *brevirostra.*

Glossy black: chin, throat, and breast, grey: stripe on the wings, and three lateral tail feathers, pure white. Bill small, straight. (*fig.* 46. *c*)

Inhabits Java? Mus. Nost.

Total length 8 inches; bill, front $\frac{6}{10}$; wings $3\frac{1}{2}$; tail, beyond, $2\frac{1}{2}$; base $3\frac{1}{2}$; tarsus 1; middle toe and claw 1. This is probably a female, but the difference in the tail distinguishes it at first sight from the two former.

36. Thamnobia *atrata.*

Entirely sooty black: wings rather paler. Tail even.

Inhabits Africa? Mus. Nost.

Total length $5\frac{3}{4}$ inches; bill, gape $\frac{7}{10}$; front hardly $\frac{1}{2}$; wings $2\frac{8}{10}$; tail, beyond, $1\frac{1}{20}$; base 2; tarsus $\frac{9}{10}$. This, in comparison to the type, is an aberrant species, since the lateral toes are not quite equal, and the tail is even, but the upper mandible is destitute of any notch, and the quills are only $\frac{4}{10}$ longer than the tertials; the third, fourth, and fifth quills are longest and equal.

37. Saxicola *leucoptera.*

Entirely dark brown: inner webs of the primaries, and shafts of the secondary quills, pure white.

Inhabits South Africa. Dr. Smith.

Large: wings and tail short; legs very long, lateral toes equal, claws slightly curved. Total length $7\frac{3}{4}$ inches; bill, the notch being obsolete, $1\frac{1}{10}$ from the gape, the margins not inflexed; wings $3\frac{8}{10}$; tail, base $2\frac{1}{2}$; tarsus $1\frac{3}{10}$; middle toe and claw $\frac{8}{10}$; hind ditto $\frac{8}{10}$; the claw as long as the toe.

38. SAXICOLA *rufiventer*.

Grey black: rump, tail covers, and body beneath, chestnut. Tail rounded, and somewhat lengthened.

Inhabits South Africa. Dr. Burchell's Coll. No. 367.

Size of *Sax. humeralis*. Total length about $7\frac{1}{4}$ inches; bill, front $1\frac{8}{10}$; wings $4\frac{3}{10}$; tarsus $1\frac{2}{10}$; tail, base $3\frac{3}{4}$. The tail is broad, more lengthened than usual, rounded, and unusually soft: the deep chestnut colour begins at the breast, and spreads round the lower back, rump and tail covers; the two outermost quills are graduated; the fourth, fifth, and sixth are equal and longest.

39. SETOPHAGA *rubra*.

Entirely red: ears of a silky whiteness: wings and tail dusky.

Inhabits Mexico, near Toluca. Mus. Nost.

Form aberrant. Bill small, compressed on the sides; while its form perfectly resembling that of *Seisurus auricapillus;* the sides inflexed; the rictal bristles strong, and extending to two thirds its length. The bright crimson of the plumage is uniform, except on the wings and tail, where it is duller, and only edges the feathers: bill and legs horn colour. Total length about $4\frac{1}{2}$ inches; bill, front $\frac{3}{10}$; wings $2\frac{3}{10}$; tail, base $2\frac{4}{10}$; tarsus $\frac{7}{10}$.

40. SETOPHAGA *miniata*.

Upper plumage, with the chin and ears, cinereous; under plumage bright crimson: crown obscure rufous: tail broad, soft; terminal half of the three outermost feathers white, the rest black.

Inhabits Mexico, between Temascaltepec and Toluca. Mus. Nost.

Rather larger than *S. rubra*. Total length $5\frac{1}{4}$ inches; bill, base $\frac{3}{10}$; wings $2\frac{4}{10}$; tail, beyond, $1\frac{6}{10}$; base 3; tarsus $\frac{6}{10}$. Form probably typical. Although the tail is much broader, longer, and more rounded than in *S. ruticilla*, yet the bill is equally depressed, and the rictal bristles so strong and lengthened, that they nearly reach to the end of the bill. It is closely allied to the *S. picta*.*

41. SETOPHAGA *auricapilla*.

Above, olive green: beneath, bright yellow: crown

* Zool. Ill. ii. pl. 3.

fulvous orange, bordered on each side by a black stripe and by another of white over the eye.

Inhabits Mexico and Brazil. Mus. Nost.

Size and general structure of *S. ruticilla*, while the colouring of the upper plumage is almost an exact counterpart of *Seisurus auricapillus*: the white stripe over the eye is between that and the black one, much broader, and margins the orange buff in the middle of the crown, which latter becomes greyish as it descends to the nape: the lores and ears are blackish, but the colour again becomes nearly white below the eye: the bill is brown, and the legs are very pale: the wings are short. Total length 5 inches; bill, front nearly $\frac{4}{10}$; wings $2\frac{1}{10}$; tail, beyond, $1\frac{4}{10}$; base 2; tarsus $\frac{7}{10}$.

42. Setophaga *rufifrons*.

Above, olive green; beneath, greyish white: fore part of the head and crown, and also the ears, bright rufous: above and beneath the eye a white stripe: throat bright yellow.

Inhabits Mexico.

Closely resembles, in size and general form, *S. auricapilla*, but the bill is more compressed. The rufous of the front and crown is separated from the lores and ears by a white stripe; and another white stripe passes from the nostrils beneath the eye and the upper part of the ears, which are rufous: the whole of the throat is bright yellow as far as the breast.

43. Zosterops *pallida*.

Pale greyish olive: beneath, yellowish white, tinged with isabella on the body and flanks: wings and tail very light brown: inner wing covers white.

Inhabits Southern Africa. Dr. Burchell's Coll. No. 43.

Size of *Z. flavigula**, from which it differs in being of a much paler and greyer olive, and in having the under tail covers straw colour instead of white.

44. Zosterops *cinerea*.

Light cinereous: plumage beneath, and the upper tail covers, white: ocular ring wanting.

Inhabits ——— ? Mus. Nost.

* Zool. Ill. i. pl. 164.

The smallest of the genus I have yet seen. Total length $3\frac{3}{4}$ inches; bill, front $\frac{4}{10}$; wings 2; tail, beyond, $\frac{9}{10}$; base $1\frac{1}{2}$; tarsus $\frac{6}{10}$. The under plumage, and the upper tail covers, which are very long, are pure white; the flanks have a tinge of light brown; lores blackish, with a white line above; the white ring round the eye is wanting.

45. Zosterops *ambigua.*

Above, dark cinereous, tinged with olive yellow on the head, ears, wings, rump, and tail: under parts white: chin and under tail covers tinged with yellowish: flanks isabella. Bill rather lengthened.

Inhabits Cayenne? Bullock's Mus. Nost.

Differs from the New Holland species, to which it has the closest resemblance, in being rather larger, in having only a very faint yellowish tinge on the throat, and in the under tail covers not being white; the bill also is much longer. It was stated to come from Cayenne; and it is very singular that I possess a drawing of this very species, made in the year 1806; it was taken from a specimen which formed part of the famous collection made there by the French, which was captured and sold by auction in this country in that year.

46. Trichas *superciliosus.*

Above, olive green; beneath, white: head above, nape, and ears, greyish black: a white line before and above the eye: middle of the crown with a pale stripe: under tail covers, yellow. Legs very long.

Inhabits Brazil. Mus. Nost.

Size of *T. velatus.* Inner wing covers and flanks olive yellow. Wings $2\frac{1}{2}$ inches; tarsus 1; middle toe and claw $\frac{8}{10}$; hind ditto $\frac{6}{10}$. The crown is darkest on the sides, and pale grey in the middle; all the under parts, to the vent, pure white, tinged with grey on the sides of the neck and breast.

47. Trichas *brachidactylus.*

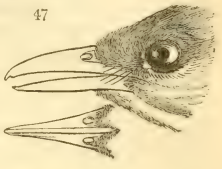
Above, olive green; beneath, yellow: a black fillet enveloping the front, eyes, and ears, bordered above by cinereous white. Lateral toes nearly equal, and shorter than the hinder one.

Inhabits, plentifully, the northern provinces of the United States.

In general size and colour it is perfectly similar to *Trichas personatus*, although the wings and tail are rather shorter: it is, however, at once distinguished by the structure of its feet: the two lateral toes are all but equal, and they are shorter than the hind toe; whereas in *personatus* the inner toe is considerably the shortest, and the outer toe is as long as the hind one. These characters have been drawn from many specimens, both old and young.

48. Chloropsis *mysticalis*.

47



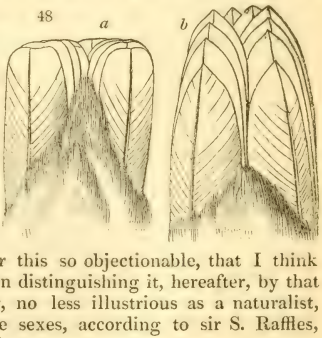
Entirely green, with a blue stripe beneath the ears. (*fig.* 47.)

Inhabits India? Mus. Nost.

Total length 6 inches; bill, gape $\frac{7}{10}$; wings 3; tail, beyond, $1\frac{1}{2}$; tarsus $\frac{6}{10}$; the smallest species I have yet seen.

49. Calyptomina *Rafflesia*.

48



Green: gape smooth: spot on the ears, and three bands upon the wings, black. Tail short, even, the feathers truncate and slightly emarginate. (*fig.* 48. *a*) *Calyptomina viridis*, Raffles. Cat. Lin. Tr. xiii. 295.

The discovery of the following species, equally green, renders the original specific name for this so objectionable, that I think ornithologists will agree in distinguishing it, hereafter, by that of its original discoverer, no less illustrious as a naturalist, than as a statesman. The sexes, according to sir S. Raffles, are coloured precisely alike.

50. Calyptomina *caudacuta*.

Entirely green. Gape with setaceous hairs: tail rounded; the feathers narrowed towards their tips, which terminate in fine soft points. (*fig.* 48. *b*)

Inhabits India. Mus. Nost.

Size rather larger than the last. General colour of a *Chlo-*

ropsis : tail tinged with blue. Total length $7\frac{1}{4}$ inches; bill, gape $\frac{9}{10}$; wings 4; tail, beyond, $\frac{3}{4}$; outer tail feather $\frac{1}{4}$ shorter than the middle; tarsus $\frac{7}{10}$; hind toe and claw $\frac{13}{20}$.*

51. Brachystoma *cinerea.*

Body entirely cinereous: wings dark brown, with pale edges to the quills: tail black, glossed with greenish, and marked by darker transverse linear shades.

Inhabits the interior of New Holland. Found by Mr. Allan Cunningham.

Total length 12 inches; bill, gape 1; ditto, from the front $\frac{6}{10}$; wings nearly 6; tail, beyond, $3\frac{3}{4}$; ditto, from the base 7; tarsus $1\frac{9}{10}$; hind toe and claw $\frac{8}{10}$. The tips of the feathers on the head and neck are paler: bill and feet black.

52. Lamprotornis *melanogaster.*

Shining sea green; glossed with purple on the ears, scapulars, rump, and upper tail covers: belly and flanks black; the latter glossed with copper: quills and tail black, with obscure purplish edges.

Inhabits Senegal. Mus. Nost.

Total length about 8 inches; bill, gape $\frac{9}{10}$; front $\frac{6}{10}$; wings $4\frac{1}{10}$; tail, beyond, $1\frac{1}{2}$; from the base $3\frac{2}{10}$; tarsus hardly $\frac{9}{10}$. Much smaller than *Cyanotis*, from which it is at once distinguished by having no spots on the wings; by the quill feathers being deep black, with only an obscure purple gloss on their outer edges; and by the middle of the belly and breast being black, without any gloss; between this black, and the green of the breast, is a purple tinge, which changes to that of copper on the flanks.

53. Lamprotornis *albiventris.*

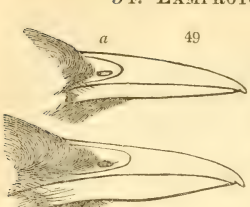
Brown, with slight metallic reflections: belly, thighs, and under tail covers, fulvous white: gape with a pale, naked, membranaceous skin: tail green, with transverse black shades.

Inhabits Southern Africa. *Le Spreo*, Le Vaill. L'Ois. d'Af. p. 188.

Total length 10 inches; bill, gape $1\frac{2}{10}$; ditto, front $\frac{7}{10}$; wings $5\frac{1}{2}$; tail, beyond, $1\frac{1}{2}$; ditto, base 4; tarsus almost $1\frac{1}{4}$; Bill black; base of the under mandible pale: tail rounded.

* I have had my suspicions that this, after all, may be the young bird, or the female, of the *C. Rafflesia*; and yet the different form of its tail feathers is so totally opposed to this supposition, that until such a similarity is established beyond all doubt, I must continue to hold the opinion here acted upon.

54. Lamprotornis *fulvipennis*.



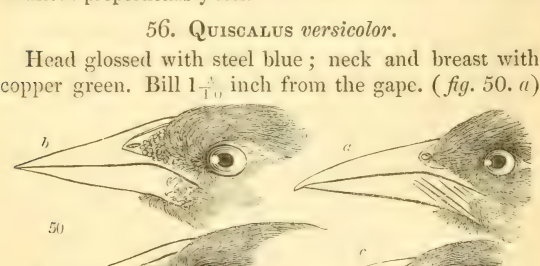
Black, glossed with purple: greater quills externally rufous, internally fulvous; the shafts half white, half black. Tail moderate, rounded. *Le Naboroup*, Le Vaill. Ois. d'Af. ii. pl. 91. (*fig.* 49. *a*)

Inhabits South Africa. Le Vaillant, Burchell.

Total length 10 inches; bill, front $\frac{8}{10}$; ditto, gape $1\frac{1}{10}$; wings $5\frac{1}{2}$; tail, base $4\frac{1}{2}$; tarsus $1\frac{1}{10}$. I suspect this species has been overlooked by all our systematists, as a variety of the *L. rufipennis*, or *Roupenne* of Le Vaill. ii. pl. 83.; the bill (*a*) is much smaller than in that (*b*); and the other dimensions proportionably less.

56. Quiscalus *versicolor*.

Head glossed with steel blue; neck and breast with copper green. Bill $1\frac{3}{10}$ inch from the gape. (*fig.* 50. *a*)



Inhabits North America.

Total length $12\frac{1}{2}$ inches; wings 6; tarsus $\frac{4}{10}$.

56. Quiscalus *purpuratus*.

Head, neck, and breast, glossed with lilac purple, without any green. Bill $1\frac{2}{10}$ inch from the gape.

Inhabits North America. (*fig.* 50. *b*)

Total length $11\frac{1}{2}$ inches; wings $5\frac{1}{2}$; tarsus $1\frac{4}{10}$. Ornithologists have considered the two last birds as only varieties; but, from inspecting a number of specimens, I am disposed, at

least for the present, to suspect they are distinct: the latter may possibly be the female of *L. versicolor**, but there does not appear sufficient evidence of this fact.

57. Quiscalus *lugubris*.

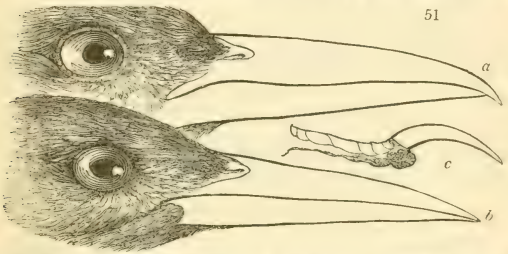
Plumage black, obscurely glossed with purple. Wings $4\frac{1}{2}$ inches long.

Inhabits Brazil. (*fig.* 50. *c*)

Total length $9\frac{1}{2}$ inches; bill, gape $1\frac{2}{10}$; wings $4\frac{1}{2}$; tail, base 4; tarsus $1\frac{2}{10}$; middle toe $1\frac{3}{10}$; hinder 1. There is a very obscure greenish tinge on the wings and tail.

58. Quiscalus *tenuirostris*.

Total length 15 inches: bill $1\frac{1}{2}$ inch long, very



slender; the commissure not sinuated. Plumage black, slightly glossed with violet. Claws slender, but slightly curved. (*fig.* 51. *b*, *c*)

Inhabits the marshes adjoining Mexico. Mus. Nost.

Total length $15\frac{1}{2}$ inches; bill, from the gape $1\frac{6}{10}$; front $1\frac{5}{10}$; wings $6\frac{1}{4}$; tail, beyond, 5; base $7\frac{3}{4}$; tarsus $1\frac{7}{10}$; hind toe and claw $1\frac{3}{10}$; middle ditto $1\frac{6}{10}$: second and third quills nearly equal, and longest; the first shorter than the fourth: lateral toes equal.

59. Quiscalus *macrourus*.

Total length near 20 inches: bill 2 inches long. Plumage black, glossed with blue on the body, and with obscure greenish on the wings and tail. Claws slender, but fully curved. (*fig.* 51. *a*)

* The prince of Musignano says that the bill of the female "measures nearly an inch and a half long;" whereas this is little more than an inch.

Inhabits Real del Monte, Mexico.

Total length 19½ inches; bill, gape 2; wings 8; tail, base 10; outer feather 4 inches shorter; tarsus 1$\frac{9}{10}$; hind toe and claw 1¼. Resembles *Tenuirostris*; but the bill is stronger, the commissure sinuated, the upper mandible more bent, and the claws more curved. The plumage has a blue, and not a lilac purple gloss.

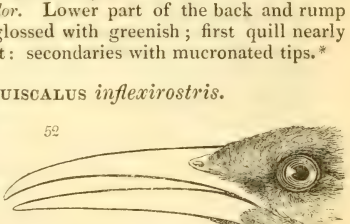
60. Quiscalus *corvinus*.

Total length 17 inches: bill 2 inches long. Plumage black; richly glossed on the ears and throat with violet purple, and on the breast, body, and back with golden green. Inner toe longer than the outer.

Inhabits North America.

Total length 17 inches; bill, gape 2; from the front 1$\frac{7}{10}$; from the feathers of the nostrils 1$\frac{4}{10}$; wings 7$\frac{2}{10}$; tail, from the base 7; tarsus 1$\frac{9}{10}$; hind toe and claw 1$\frac{3}{10}$; middle ditto 1¾; the claw only $\frac{6}{10}$; wings short, not reaching to the end of the upper tail covers; first quill longer than the fifth. Claw less curved than in *Versicolor*. Lower part of the back and rump dull black, obscurely glossed with greenish; first quill nearly as long as the two next: secondaries with mucronated tips.*

61. Quiscalus *inflexirostris*.


52

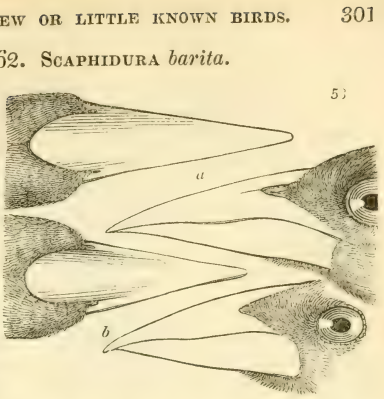
Bill slender, near ½ inch long; commissure curved; the margins considerably inflexed, and not sinuated. Plumage black, glossed with purple on the body, and greenish on the wings. (*fig.* 52.)

Inhabits —— ? Mus. Nost. Liverpool Institution.

Size and colour precisely like *Q. lugubris*; but the great difference in their bills induces me to consider them quite distinct. In this, the bill is longer and much more slender, the upper mandible and the commissure more curved, but without any sinuosity at the margins, which are also much inflexed.

* The *Quiscalus major* of the American ornithologists is stated to have a bill only *one inch and three quarters* from the angle of the mouth; but their descriptions, in other respects, are so defective, that it is impossible to determine its comparative characters with those here defined.

62. Scaphidura *barita*.



Bill $1\frac{4}{10}$ inch from the front. Plumage deep black, glossed with lilac purple on the head and body.

Inhabits Brazil. (*fig. 53. a*)

Total length 14 inches; bill from the gape $1\frac{3}{10}$; wings 7; tail, beyond, $2\frac{1}{2}$; base 6; tarsus $1\frac{5}{10}$; middle toe and claw the same.

63. Scaphidura *crassirostra*.

Bill little more than one inch from the front. Plumage deep glossy black, without any other tint. (*fig. 53. b*)

Inhabits Brazil. Mus. Nost.

Total length $11\frac{3}{4}$; bill, from the gape $1\frac{1}{10}$; wings $5\frac{3}{4}$; tail, beyond, $1\frac{1}{2}$; base $4\frac{3}{4}$; tarsus $1\frac{2}{10}$; middle toe and claw $1\frac{4}{10}$. Bill thicker and shorter than in the last. The black of the plumage has a tinge of blue, but there are no positive reflections: the casque is broader, but does not extend so far back on the forehead.

64. Scolecophagus *sericeus*.

Bill thick, short. Plumage black, richly glossed with purple. Tail even: wings more than $4\frac{1}{2}$ inches long. *Icterus sericeus*, Lich. Berlin Cat.

Inhabits Brazil. Mus. Nost.

General appearance of an *Agelaius*, but the culmen is not flattened, and the tip of the upper mandible is bent over the under, as in *Quiscalus*, with which it would be associated, but for its flattened tail: both this and the next seem, therefore, to connect *Quiscalus* to *Scolecophagus*. The wings have a slight greenish gloss, but that on the body is rich, uniform purple. Total length 8 inches; bill, gape $\frac{7}{10}$; wings $4\frac{7}{10}$; tail, beyond, $1\frac{4}{10}$; base $3\frac{5}{10}$; tarsus 1; inner toe rather shortest.

65. Scolecophagus *minor*.

Bill thick, short. Plumage black, richly glossed with purple. Tail rounded: wings hardly 4 inches long. *Icterus minor*, Spix, pl. 63. f. 2.

Inhabits Brazil.

In structure and colour precisely resembling the last, of which, but for its rounded tail, and much smaller size, I should have thought it a variety. Total length $6\frac{3}{4}$ inches; bill, gape $\frac{7}{10}$; wings hardly 4; tail, beyond, $1\frac{4}{10}$; base $3\frac{4}{10}$; tarsus $\frac{9}{10}$; inner toe rather shortest.

66. Scolecophagus *Mexicanus*.

Black, glossed with purple on the head and throat, and with greenish on the rest of the plumage: base of the under mandible flattened: first quill longer than the fourth. (*fig.* 344. *d*)

Inhabits Mexico.

Rather larger than *S. ferruginus*, but resembling it in general structure. Total length $9\frac{4}{10}$ inches; bill, from the gape $\frac{8}{10}$; wings $5\frac{1}{4}$; tail, base $4\frac{1}{4}$; tarsus $1\frac{2}{10}$; middle toe and claw 1; hind ditto $\frac{17}{20}$. In *S. ferruginus*, the first quill is rather shorter than the fourth, the bill is not so strong, and the base of the under mandible is rounded.

67. Icterus *tibialis*.

Black. Tail lengthened. Thighs and shoulder covers, both above and beneath, pure yellow.

Inhabits Brazil. Mus. Nost.

Size and habit of *I. Cayenensis*.* Total length $8\frac{1}{4}$ inches; bill straight, from the gape $\frac{8}{10}$; front $\frac{7}{10}$; wings $3\frac{1}{2}$; tail, beyond, $2\frac{1}{2}$; base $4\frac{1}{4}$; tarsus $\frac{8}{10}$.

68. Agelaius *ruficollis*.

Glossy black: front, crown, forepart of the neck, and breast, chestnut.

Inhabits the province of Pernambuco in Brazil: excessively rare. Mus. Nost.

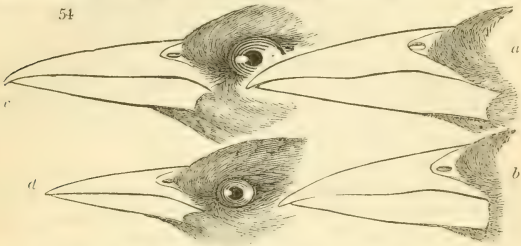
Total length 7 inches; bill, gape $\frac{7}{10}$; ditto, front $\frac{6}{10}$; wings $3\frac{1}{2}$; tail, beyond, $1\frac{4}{10}$; ditto, base 3; tarsus 1; middle toe and claw $1\frac{2}{10}$. The second, third, and fourth quills

* Zool. Ill. ii. pl. 22.

longest and equal: tail rounded. Ears and sides of the neck black.

69. Agelaius *sulcirostris*.

Entirely glossy black. Feathers of the head and neck lanceolate: lores plumed: upper mandible slightly bent



at the tip; lower with oblique grooves at the base. Spix, 64. f. 2.

Inhabits Brazil. (*fig.* 54. *a*) Mus. Nost.

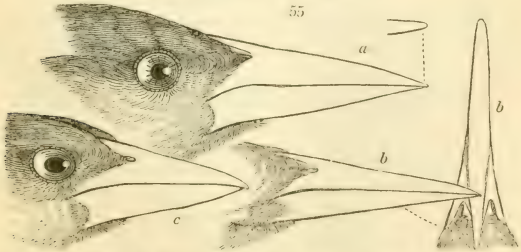
Total length 9 inches; bill, gape $\frac{9}{10}$; wings 5; tail, beyond, 2; base 4; tarsus $1\frac{9}{10}$; hind toe and claw $\frac{9}{10}$. This seems to be the *Icterus unicolor* of Lich. Berlin Cat.

70. Agelaius *pustulatus*.

Entirely glossy black. Feathers of the head lanceolate: lores and base of the under mandible naked and warted.

Inhabits the plains in the interior of Bahia, Brazil. (*fig.* 54. *b*) Mus. Nost.

71. Leïstes *oriolides*.



Brown: body beneath, lesser wing covers, and rump,

yellow. Bill lengthened; the commissure sinuated, and the tip slightly depressed. (*fig. 55. a*)

Inhabits Brazil.

The *Zanth. gasquet.* and *L. Suchii* of authors. Total length 10 inches; bill, gape $1\frac{2}{10}$; front $1\frac{1}{10}$; wings nearly 5; tail beyond $2\frac{2}{10}$: base $4\frac{1}{4}$; tarsus $1\frac{4}{10}$; hind toe and claw 1.

72. Leïstes *brevirostris.*

Brown: body beneath, lesser wing covers, and rump, yellow. Bill short; culmen convex; the tip of the upper mandible slightly bent over the lower. (*fig. 55. c*)

Inhabits Brazil.

The *Oriolus bicolor* of the Paris Museum. Rather smaller than the next, particularly in the length of the bill, which only measures one inch from the gape: neither the culmen nor the tip is depressed or flattened: can it possibly be a young bird of the last?

73. Leïstes *tenuirostris.*

Olive brown: body beneath, and first row of the lesser wing covers, yellow: rump brown. Bill slender; the commissure not sinuated; the tip considerably depressed. (*fig. 54. d*)

Inhabits Brazil.

The *Oriolus draco* of the Paris Museum. Nearly the size of the last; but the bill is much more slender, the rump is olive brown, the wings are more pointed, and the tail less rounded: sides of the body, crest, thighs, and under tail covers, olive brown.

74. Leïstes *niger.*

Entirely glossy black, without reflections. Feathers of the head and neck pointed: bill $1\frac{1}{4}$ inch long: wings $5\frac{1}{2}$ inches.

Inhabits Chili. Mus. Nost.

Total length about 10 inches; bill, from the gape $1\frac{1}{4}$; front the same; wings $5\frac{1}{2}$; tail, beyond, $2\frac{1}{2}$; base $4\frac{3}{4}$; tarsus $1\frac{1}{4}$; hinder toe and claw 1. Bill very straight, much depressed, and advancing very far upon the forehead.

75. Leïstes *unicolor.*

Male entirely black: female, above, dark rufous brown,

striped with black; beneath, brownish buff. Bill small, slender, less than 1 inch long.

Inhabits Brazil. Mus. Nost.

Size not larger than *Agelaius phœniceus*. (*fig. 54. d*) Bill remarkably straight, slender, and laterally very acute; but the culmen is flattened from the front, and the tip of the upper mandible considerably depressed and obtuse. The male is deep black, but not glossed with any other tint: the tail broad, and, with the wings, more than usually rounded: it seems the annectant species between *Agelaius* and *Leistes*. Total length 8 inches; bill, base $\frac{9}{10}$; front $\frac{8}{10}$; wings $3\frac{6}{10}$; the first and second quills graduated; tail, base nearly 4; tarsus $\frac{9}{10}$; hind toe and claw $\frac{7}{10}$.

76. Molothrus *brevirostris*.

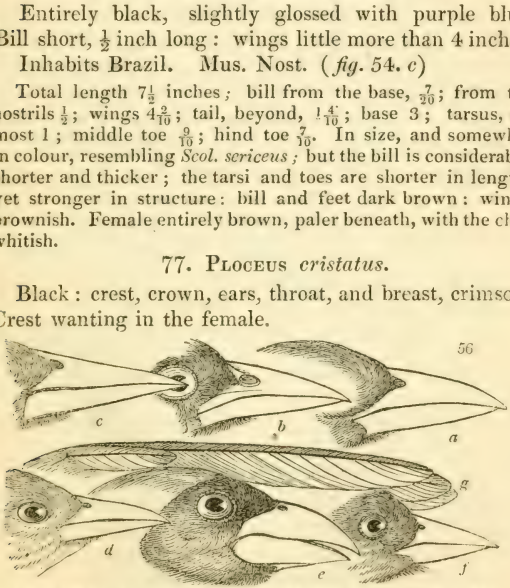
Entirely black, slightly glossed with purple blue. Bill short, $\frac{1}{2}$ inch long: wings little more than 4 inches.

Inhabits Brazil. Mus. Nost. (*fig. 54. c*)

Total length $7\frac{1}{2}$ inches; bill from the base, $\frac{7}{10}$; from the nostrils $\frac{1}{2}$; wings $4\frac{2}{10}$; tail, beyond, $1\frac{4}{10}$; base 3; tarsus, almost 1; middle toe $\frac{8}{10}$; hind toe $\frac{7}{10}$. In size, and somewhat in colour, resembling *Scol. sericeus*; but the bill is considerably shorter and thicker; the tarsi and toes are shorter in length, yet stronger in structure: bill and feet dark brown: wings brownish. Female entirely brown, paler beneath, with the chin whitish.

77. Ploceus *cristatus*.

Black: crest, crown, ears, throat, and breast, crimson. Crest wanting in the female.



Inhabits Western Africa. Mus. Par. (*fig. 56. b*)

Total length $6\frac{1}{2}$ inches; bill, from the gape $\frac{9}{14}$; ditto front $\frac{7}{10}$; wings $3\frac{4}{10}$; tail, beyond, $1\frac{1}{2}$; tarsus about $\frac{6}{10}$; hind

toe and claw $\frac{13}{20}$. This is the *Malimbus cristatus* of Vieillot, who has mistaken the next species for the female: both sexes are in the Paris Museum. The first quill is nearly half as long as the second: the black colour is inclined to brown: the front and lores are black; which colour spreads round the eye, and forms a line at the base of the under mandible, and the tip of the chin: claws fully curved.

78. Ploceus *rubricollis*.

Black: crown of the head, and upper part of the neck, crimson. Ois. Chant. pl. 43.

M. Vieillot describes this as the female of the above, and refers to a specimen in his own collection: the sizes, we may therefore presume, are the same, yet I have never seen this.

79. Ploceus *niger*.

Entirely sooty black: wings and tail tinged with brown. The first quill nearly half as long as the second.

Inhabits Western Africa? Paris Mus. (*fig.* 56. *a*)

Size of *P. cristatus*. Bill, from the gape $\frac{18}{10}$ inch; ditto, front $\frac{14}{20}$; tail, beyond, $1\frac{2}{10}$; wings $3\frac{3}{10}$; tarsus $\frac{8}{10}$; hind toe and claw $\frac{7}{10}$. Bill black: legs pale brown.

80. Ploceus *aurantius*.

Orange yellow, deepest and brightest on the head: back olive green: wing feathers blackish brown, margined with yellow. (*fig.* 55. *d*)

Inhabits Western Africa. Paris Mus.

Total length $5\frac{1}{2}$ inches; bill, from the gape $\frac{6}{10}$; ditto, front $\frac{1}{2}$; wings, 3; tail beyond, $1\frac{1}{4}$; tarsus, $\frac{13}{20}$; hind toe and claw 12. Claws fully curved: second quill shorter than the third. First spurious lores black: tail light dusky brown: rump obscure orange yellow. *Malimbus aurantius*, Vieil. Ois. Ch. pl. 44. (The *fig.* 56. *c*, is *P. icterocephalus*; see Vol. I. p. 189.)

81. Ploceus *personatus*.

Large. Above, olive green; beneath, yellow: front, eyes, chin, and base of the ears enveloped in a black hood, which descends in a narrow line on the throat. Bill thick, arched above: tail rounded.

Inhabits ——? Paris Mus. (*fig.* 56. *e*)

Total length about $6\frac{1}{2}$ inches; bill, from the gape $\frac{7}{10}$; ditto, front $\frac{5}{10}$; wings $3\frac{1}{2}$; tail, beyond, $1\frac{1}{2}$; tarsus $\frac{9}{10}$; hind toe and

claw $\frac{8}{10}$. Feathers of the back with a dusky central brown stripe: wing covers and quills with pale yellowish edges: bill black, strong, and the culmen more curved than the gonys: the black mask which is in front of the head, includes the eyes, but only half of the ear feathers: legs brown: under tail covers nearly white; tail rounded, coloured like the quills. The first quill is nearly half as long as the second, the third longest; claws large: commissure sinuated.

82. Ploceus *melanotis*.

Small. Above, olive green; beneath, yellow: front, ears, chin, and halfway down the middle of the throat enveloped in a black hood. Bill slender: tail even.

Inhabits ——? Paris Mus. (*fig. 56. f, g*)

Total length about $4\frac{1}{2}$ inches; bill, gape $\frac{5}{10}$; wings $2\frac{7}{10}$; tail, beyond, $\frac{6}{10}$; tarsus $\frac{13}{20}$; hind toe and claw $\frac{5}{10}$. Exceedingly like the last; but the black in front does not include the eyes; it likewise spreads over the *whole* of the ear feathers, and descends in a much broader stripe in front of the throat: the bill is likewise differently formed, more regularly conic, and the commissure not sinuated: claws small: first quill small, spurious; second $\frac{2}{10}$ shorter than the third. An aberrant species, leading to *Euplectes*.

83. Ploceus *flaviceps*.

Above, olive yellow, spotted with black: upper part of the head, and plumage beneath, pure and bright yellow: sides of the head and chin deep black, continued in a narrow stripe down the middle of the throat, and beyond the breast.

Inhabits Senegambia.

Total length $6\frac{1}{2}$ inches; bill, gape $\frac{8}{10}$; front nearly the same; wings $3\frac{1}{2}$; tail, beyond, 1; from the base $2\frac{3}{10}$; tarsus $\frac{9}{10}$; middle toe and claw the same; hinder ditto, $\frac{8}{10}$. Size rather larger than *P. textor*, but precisely of the same form and structure. The black patch which covers the ears, lores, and chin, suddenly contracts and forms a slender line, which is continued beyond the breast.

84. Ploceus *cucullatus*.

Above, olivaceous yellow; beneath, pure yellow: the whole of the head, ears, and fore part of the throat enveloped in a black hood.

Inhabits Senegambia.

Total length nearly 6 inches; bill, from the gape $\frac{13}{20}$; from the front $\frac{6}{10}$; wings $2\frac{9}{10}$; tail, beyond, $1\frac{1}{4}$; base $2\frac{1}{10}$; tarsus, $\frac{8}{10}$; hind toe and claw $\frac{13}{20}$; middle ditto $\frac{8}{10}$. Structure of *P. textor*, but smaller: the black hood forms a narrow rounded lappet in front of the throat, and reaches as far as the breast.

85. Ploceus *ruficeps*.

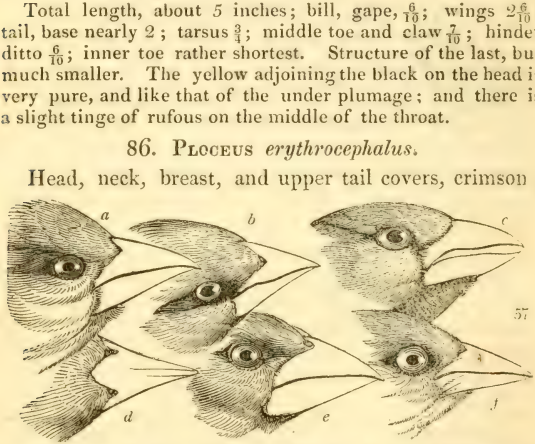
Above, olivaceous yellow; beneath, pure yellow: crown of the head, and fore part of the throat, rufous: chin, ears, and frontal line, black.

Inhabits Senegambia.

Total length, about 5 inches; bill, gape, $\frac{6}{10}$; wings $2\frac{6}{10}$; tail, base nearly 2; tarsus $\frac{3}{4}$; middle toe and claw $\frac{7}{10}$; hinder ditto $\frac{6}{10}$; inner toe rather shortest. Structure of the last, but much smaller. The yellow adjoining the black on the head is very pure, and like that of the under plumage; and there is a slight tinge of rufous on the middle of the throat.

86. Ploceus *erythrocephalus*.

Head, neck, breast, and upper tail covers, crimson:



back brownish olive, striped with black: body, beneath, pale olive: wing covers tipt with white.

Inhabits the Isle Mauritius. Pl. Enl. 665.? Brown, Ill. 28.? (*fig.* 57. *f*)

Total length about 5 inches; bill, gape $\frac{5}{10}$; wings $2\frac{1}{2}$; tail, beyond, $\frac{9}{10}$; ditto, base $1\frac{1}{2}$; tarsus $\frac{9}{10}$; hind toe and claw $\frac{6}{10}$. I know not whether to arrange this bird as a *Ploceus* or a *Euplectes*: in structure it decidedly agrees the most with *Ploceus*, both in the bill, wings, and feet; but in habit, size, and cast of colouring, it resembles the next species, which is a true *Euplectes*. Bill lengthened, conic, much compressed; commissure not sinuated: tail even; the first quill short, spurious; second

shorter than the third; circle round the eyes, and the lores, black: wings blackish; tips of the greater covers with an obsolete white band, and a broader one on those of the lesser covers: bill black: legs paler: claws broad, short, and well curved.

87. Euplectes *rubra*.

Body entirely scarlet: feathers of the back striped with black: wings and tail black, with pale yellowish edges. (*fig.* 57. *b*)

Inhabits Madagascar. Pl. Enl. 134. f. 2.

Size of the last; but the bill is short, thick, and perfectly conic; the commissure being distinctly sinuated. Feet resembling those of *Ploceus*: first quill feather minute, the third and fourth longest: tail rounded, subdivaricated; the feathers narrow and pointed: feet more slender. Lores and stripe behind the eye, black. This is the *Emberyza rubra* of Gmelin; the former is the *Fringilla erythrocephala*; and both have been confounded by Cuvier and other writers as one species.

88. Euplectes *albirostris*.

Head, neck, and bill white, with a bright yellow subcrested crown: plumage, above, greyish brown; beneath, white: breast with a broad black collar.

Inhabits India. Mus. Nost. (*fig.* 57. *a*, *d*)

Form typical. Total length almost $5\frac{3}{4}$ inches; bill, gape $\frac{6}{10}$; ditto, front $\frac{5}{10}$; wings $2\frac{7}{10}$; tail, beyond, $1\frac{3}{10}$; tarsus $\frac{8}{10}$; hind toe and claw $\frac{7}{10}$; the claw only $\frac{4}{10}$. Excepting the short bright yellow crest, which covers the crown, the whole of the head, nape, ears, and upper part of the throat, are white: on the breast is a broad black collar, half an inch deep, which terminates with having white edges to the feathers: upper plumage grey; the feathers of the wings and back darkest in the middle; the quills and covers being margined with yellowish white; from the breast downwards the plumage is also white, tinged with grey on the flanks. Feet large: claws long and slender: the first quill minute, the second longest: bill large, compressed; the commissure scarcely sinuated. Edwards, pl. 189.

89. Euplectes *lepidus*.*

Flanks with a blackish patch, the feathers of which

* I can see nothing in the structure of this bird to induce me to consider it otherwise than as a typical species of *Euplectes*, which is itself a subgenus, of which almost every known species varies somewhat in the size and form of the bill, but never in those of the wings and feet.

are margined with whitish: chin black: plumage, above, drab brown: the margins of all the feathers, and the whole of the under parts, pale isabella.

Inhabits South Africa. Paris Mus. (*fig. 57. c*)

Form typical. Bill and legs very pale: there is a large patch of black upon the throat, and a narrow line of the same colour between the eye and the chin, close to the base of the bill; the patch of blackish brown is on the side of the body; and the sharp white edges of the feathers which it covers, gives them a scale-like appearance: the commissure is sinuated. Size of a sparrow. Total length about 5 inches; bill, gape $\frac{6}{10}$; wings 3; tail, beyond, $\frac{7}{10}$; tarsus $\frac{7}{10}$.

90. Euplectes *flaviceps.*

Crown of the head bright yellow: sides, ears, and chin, brownish black: upper plumage blackish, varied with ferruginous: breast and flanks fulvous brown, striped with black.

Inhabits India. Mus. Nost. (*fig. 57. e*)

Form typical. Total length 5 inches; bill, gape $\frac{6}{10}$; wings $2\frac{6}{10}$; tail, beyond, $1\frac{1}{10}$; tarsus $\frac{8}{10}$; hind toe and claw $\frac{7}{10}$. Bill strong, thick. The brown of the chin extends half way down the throat; the remaining portion, the breast, and the sides of the body, and also the rump, are light ferruginous, narrowly striped with black: middle of the body almost white: quills and tail dark brown, with pale edges: bill black: legs, pale. Tertials almost as long as the quills: claws long, very slender.

91. Euplectes *Philippensis.*

Fore part of the head, ears, and chin, blackish brown: crown, throat, and breast, pure yellow: body, belly, and margin of the wing feathers, white: nape and neck, above, yellow; the feathers brown in the middle.

This is the *Loxia Philippina* of authors; the above description being taken from its figure on Pl. Enl. 135. f. 2. If this is correct, the species differs both from our *Ploceus personatus* and *melanotis*, by having the crown bright yellow, and the body, beneath, white, not yellow.

92. Euplectes *aurinotus.*

Head, neck, and body, beneath, deep black: back golden yellow: wings brown; the covers spotted with black, and tipt with white: bill black: legs pale.

Inhabits Benguela and Western Africa.

Size of *Euplectes flaviceps*. The above specific character I have taken from Brown's Illust. pl. 25. f. 1.; the figure is so characteristic of this genus, that I have no hesitation in thus designating it, although I have never yet seen the species. The above descriptions, with those in the two volumes of Western African birds, will include all the species I have yet seen of these two genera.

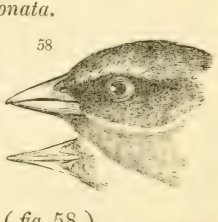
93. Tachyphonus *phœnicius*.

Glossy black: shoulder covers rich orange, margined with white.

Inhabits ——? In the collection of Mr. Horsfield, of Everton, near Liverpool, who believes it came from Fernando Po, on the African coast.

Size of *T. cristatus*. Bill almost $\frac{7}{10}$ inch; wings $2\frac{8}{10}$; tail, from the base 3. Form and structure strictly typical. Bill, above, black; beneath, whitish at the base: inner wing covers, and base of the quills, pure white. The fourth quill the longest, third and fifth equal: tail rounded. If this is truly African, it is a solitary exception to the strict geographic range of the whole family of tanagers.

94. Pipillo *personata*.


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Above, dark cinereous; beneath, rufous: middle of the body, and tip of the outer tail feather, white: eyes, ears, and lores included in a black fillet, which is margined above and below by a stripe of white.

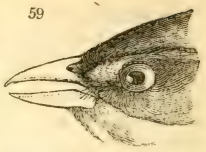
Inhabits Brazil. Mus. Nost. (*fig.* 58.)

Total length $5\frac{1}{2}$ inches; bill, gape $\frac{1}{2}$; wings $2\frac{8}{10}$; tail, beyond, 2; base $2\frac{1}{2}$; tarsus $\frac{7}{10}$. Form typical. Size small. Bill black: legs pale: under tail covers pale buff: the upper white stripe begins at the nostrils, and ends at the nape, where it is tinged with buff.

95. Pipillo *superciliosa*.

Above, cinereous: rump and plumage beneath, rufous: throat and breast pale fulvous: middle of the body, ends of the lateral tail feathers, and longitudinal stripe

59



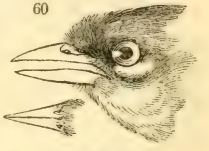
on the wings, white: above the eye a whitish stripe, margined above by a black one.

Inhabits near Coritiva, South Brazil. Mus. Nost. (*fig.* 59.)

Size of a sparrow. Form typical. Bill horn colour: legs, pale. Total length nearly 6 inches; bill, front $\frac{4}{10}$; wings $2\frac{8}{10}$; tail, beyond, $1\frac{7}{10}$; ditto, base 3; tarsus $\frac{8}{10}$; hind toe and claw $\frac{6}{10}$. The white stripe on the wings borders the external webs of the fourth and fifth quills.

96. Pipillo *rufitorques*.

60



Above, cinereous; beneath, white: collar on the throat, and sides of the body, rufous: lores and line beneath the eye black: base of the outer quills white. Bill entire: tail almost even.

Inhabits South Brazil. Mus. Nost. (*fig.* 60.)

Form aberrant. Size of the black-cap warbler. Total length $4\frac{3}{4}$ inches; bill, in front $\frac{7}{20}$; wings $2\frac{3}{10}$; tail, beyond, 1; ditto, base, $2\frac{1}{2}$; tarsus $\frac{7}{10}$; hind toe and claw $\frac{1}{2}$. This is evidently an aberrant species, having the tip of the upper mandible perfectly entire, and the tail almost even, without any white at the tips of the lateral feathers: the rufous collar is rather at the base of the throat than upon the breast: the third and fourth quills are equal, and longest; and the first much shorter than the second: the stripe beneath the eye passes to the ears, and encloses a white spot beneath the eye: the rufous of the collar is extended, on each side, down the sides of the breast and body; and there is a faint olive tinge on the back. In the two last species, the claws are more curved than in the larger typical species.

97. Leucopygia *ruficollis*.

Above, black; beneath, cream colour: chin and throat buff or rufous: lower part of the back, band on the lesser wing covers, and spot at the base of the quills, white: flanks and under tail covers sometimes tinged with rufous.

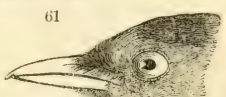
Inhabits the interior of Bahia, Brazil. Mus. Nost.

Total length $6\frac{1}{4}$ inches; bill, from the gape $\frac{6}{10}$; wings

$3\frac{2}{10}$; tail, beyond, $1\frac{1}{2}$; ditto, from the base 3; tarsus $\frac{9}{10}$; middle toe and claw $\frac{9}{10}$; hind ditto $\frac{6}{10}$. Frontal feathers rather stiff or setaceous. Ears and sides of the neck black: the band or spot of white upon the wing covers is very large and conspicuous, but does not extend quite across; and that upon the outer base of the primary quills is confined to the fourth, fifth, sixth, seventh, and eighth. The upper tail covers, and the tail, are black; but the shaft of the outermost feather, and also its internal tip, are white. In some specimens the rufous on the throat is much paler than in others, so as to become of a buff orange.

98. TANAGRELLA *multicolor*.

61



Bill slender, lengthened. Plumage, above, black; beneath, varied: ears, chin, side of the head, and lesser wing covers, shining blue green: rump and frontal spot golden: belly and vent rufous: breast and flanks cinereous white: throat with a black collar: upper tail covers blue green. *Motacilla velia?* Gmelin. (*fig.* 61.)

Inhabits, in abundance, the forests of Urupé, near Bahia, Brazil: rare in other parts.

Total length $5\frac{1}{2}$ inches; bill, from the gape $\frac{13}{20}$; ditto, front $\frac{1}{2}$; wings $2\frac{6}{10}$; tail, beyond, 1; ditto, base $2\frac{1}{4}$; tarsus $\frac{6}{10}$. The mixture of rich colours in this beautiful bird renders its accurate description very difficult; some of the feathers which form the black collar are tipt with cinereous, while the lower part of the back seems as if it was gilded.

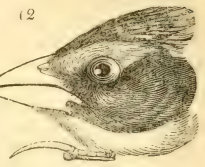
99. TANAGRA *serioptera*.

Light cinereous green: back and scapulars darker: quills and tail blue green: shoulder and lesser wing covers silky white, tinged with violet.

Inhabits gardens and cultivated tracts in Demerara.

Total length $6\frac{1}{2}$ inches; bill, gape $\frac{7}{10}$; wings $3\frac{1}{2}$; tail, beyond, $1\frac{1}{4}$; base $2\frac{7}{10}$; tarsus $\frac{8}{10}$. This is one of the small group composing the bishop tanagers: it is immediately distinguished from *episcopus*, *inornata*, *cælestes*, and *ornata*, and one or two more of the same section, by the very peculiar colour of the lesser wing covers, which are violet white, delicately tinged round their edges with violet blue. Both sexes, sent by Mr. Schomburgh, are coloured alike.

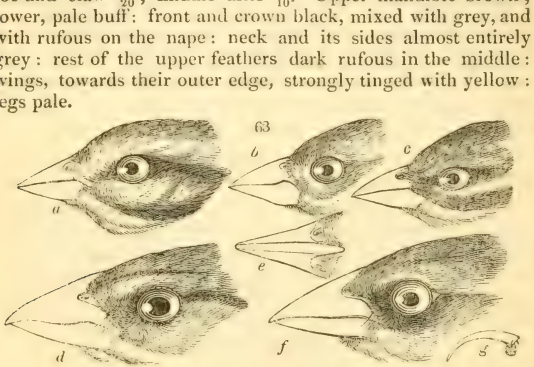
100. Leptonyx *melanotis*.



Above, sparrow brown, varied with blackish stripes on the head, grey on the neck, and rufous on the back; beneath, white, immaculate: ear feathers very large, spreading, and black: sides of the head with a broad white band: under wing covers, and margin of the wings, bright yellow: tail feathers narrow, black, tipt with white. (*fig.* 62.)

Inhabits the plains of South Brazil. Mus. Nost.

Size rather less than a sparrow. Total length $5\frac{1}{2}$ inches; bill, in front $\frac{4}{10}$; ditto, gape $\frac{6}{10}$; wings $2\frac{3}{10}$; tarsus $\frac{13}{20}$; hind toe and claw $\frac{11}{20}$; middle ditto $\frac{7}{10}$. Upper mandible brown; lower, pale buff: front and crown black, mixed with grey, and with rufous on the nape: neck and its sides almost entirely grey: rest of the upper feathers dark rufous in the middle: wings, towards their outer edge, strongly tinged with yellow: legs pale.



101. Aimophila *superciliosa*.

Above, sparrow brown, striped with black; beneath, cinereous grey: eye stripe and chin white: lores and lower border of the eye black: crown dark chestnut, with a paler central stripe. (*fig.* 63. *e, f, g*)

Inhabits Mexico. Mus. Nost.

Total length 7 inches; bill, gape $\frac{6}{10}$; front the same; wings $3\frac{1}{10}$; tail, beyond, 2; base 3; tarsus $\frac{9}{10}$; hind toe and claw $\frac{7}{10}$. All the feathers above striped with black in the middle: the eye stripe is very broad and cream coloured, beginning at the nostrils and passing beyond the ears; these latter are blackish,

with white lines: tail feathers narrow, black in the middle; the centre pair with transverse blackish lines: bill deep black: legs pale.

102. Aimophila *rufescens.*

Above, rufous brown, unspotted; beneath, greyish white: crown rufous, bordered by a black line: sides of the head and eye stripe grey: the chin and upper part of the ears are each margined with a black line. (*fig.* 63. *d*)

Inhabits Mexico. Mus. Nost.

Size of the last. Bill, gape $\frac{6}{10}$ inch: wings $2\frac{8}{10}$; tail, beyond, $1\frac{8}{10}$; base 3; tarsus nearly 1; hind toe and claw $\frac{7}{10}$. Upper plumage without spots: tail and lesser quills entirely rufous; but not of so deep a tinge as that on the crown, which is bordered by a line of deep black: over the eye is a broad stripe, beginning at the nostrils, where it is white; but it changes beyond the eye into clear grey: upper mandible black, lower pale: feet light: flanks drab brown.

103. Fringillaria *rufa.*

Head and chin grey, with three white and two black stripes on each side: crown black, with an obscure paler stripe down the middle: upper plumage and wing covers rufous brown, varied with black; under plumage and quills rufous, unspotted. (*fig.* 63. *a*)

Inhabits Africa? Mus. Nost.

Total length $5\frac{1}{2}$ inches; bill, gape $\frac{4}{5}$; wings $2\frac{9}{10}$; tail, beyond, $1\frac{2}{10}$; ditto, base $2\frac{1}{2}$; tarsus $\frac{4}{5}$.

104. Fringillaria *vittata.*

Above, grey, striped with black; beneath, cinereous grey: sides of the head with two white and two black stripes: wing covers rufous: quills and tail blackish: chin and under tail covers whitish. (*fig.* 63. *c*)

Inhabits South Africa. Mus. Nost.

Size of a sparrow. Total length 6 inches; bill, gape $\frac{4}{10}$; wings $2\frac{8}{10}$; tail, beyond, $1\frac{7}{10}$; ditto, base $2\frac{7}{10}$; tarsus $\frac{7}{10}$. Bill very conic; the two mandibles nearly equal: middle of the crown with an obsolete grey line; the black stripes being thickest on the sides: under wing covers and edge of the shoulders white: edge of the outermost tail feather dirty white: lesser wing covers pure rufous; greater, with their centre black: feet blackish, rather strong.

105. Fringillaria *anthoïdes*.

Coloured like a lark: above, isabella, striped with brown; beneath, paler and immaculate: above the eye, and beneath the ears, a pale stripe: outer edge of the secondaries, and inner edge of all the quills, rufous: a dark stripe behind the eye. (*fig.* 63. *b*)

Inhabits South Africa. Mus. Nost.

Form aberrant. Lower mandible and feet pale: inner toe shorter than the outer: four first quills almost equal: throat inclining to dusky white: breast of a darker isabella colour than the body: belly and vent almost white: wings and tail brown; the latter quite even.

106. Agrodroma *bistriata*.

Earthen brown, varied with deep fulvous: beneath, whitish: breast striped: on each side the chin, two black maxillary stripes. Hind claw shorter than its toe, and moderately curved.

Inhabits Tasmania. Mr. Humphrey, Mus. Nost.

Total length $6\frac{1}{2}$ inches; bill, from the gape $\frac{7}{10}$; wings 3; tail, beyond, $1\frac{1}{4}$; tarsus $\frac{8}{10}$; hind toe and claw $\frac{3}{4}$. Lores and eyebrows whitish: ears light fulvous brown, bordered above and below with a black stripe, and below the lower one is another: two outer tail feathers white, with a black band along their inner margins.

107. Agrodroma *Australis*.

Earthen brown, varied with light fulvous: beneath, whitish: breast striped: on each side the chin a single maxillary black stripe. Hind claw longer than its toe, and nearly straight.

Inhabits Australia or Tasmania? Mus. Nost.

Total length $6\frac{1}{4}$ inches; bill, from the gape $\frac{3}{4}$; wings $3\frac{2}{10}$; tail, beyond, $1\frac{1}{10}$; base $2\frac{1}{2}$; tarsus 1; hind toe and claw $\frac{8}{10}$. Closely resembling the last; but there is no second black stripe below the ears, the fulvous ground of the plumage is much paler, and all the claws are much less curved.

108. Pyrrhulauda *Australis*. Smith.

Head, ears, throat, and all the under plumage, deep black: back, wing covers, tertials, and rump, light earthen brown, or isabella: the feathers darker in the middle: quills and tail black; the two middle feathers of the latter light brown.

Inhabits South Africa.

Total length 5 inches; bill, front $\frac{3}{10}$; wings $3\frac{1}{10}$; tail, beyond, $1\frac{1}{10}$; ditto, base 2; tarsus $\frac{6}{10}$; hinder toe and claw $\frac{4}{10}$; middle ditto $\frac{5}{10}$. Bill small: wings much lengthened: anterior toes very small and short: all the claws nearly straight: the black on the crown and ears graduates into the brown of the neck: spurious quill $\frac{1}{2}$ inch long. *P. melanosoma*, Class. of Birds, ii. 294.

109. Crithagra *ruficauda*.

Head grey, with two white lines beneath the eye, and a larger one above: upper plumage isabella, striped with brown: beneath, whitish: quills black: tail bright rufous.

Inhabits South Africa. Mus. Nost.

Total length $4\frac{1}{2}$ inches; bill, gape $\frac{3}{10}$; wings $2\frac{4}{10}$; tail, beyond, $1\frac{1}{10}$; ditto, base $1\frac{8}{10}$; tarsus $\frac{1}{2}$. This is a most extraordinary bird, having all the outward aspect of a *Pyrrhulauda*, in regard to colour, but with the real structure of *Crithagra*; this affinity being manifested by the bill and feet. The tertials are not lengthened; and the hind toe and claw is scarcely shorter than the tarsus. In its grey head, and rufous tail, it shows its analogy to *Dasycephala*, and all those groups similarly coloured: the wing covers are rufous, but not so bright as the tail; and the base of the lesser covers are black: the rump and upper covers are like the tail, the feathers of which are more or less marked with a longitudinal black stripe at the end of the shaft: the bill and feet are pale.

110. Crithagra *canicollis*.

Back of the head, neck, sides of the throat, and breast, light cinereous: back, rump, and margins of the wing and tail feathers, yellow-olive: front, chin, and under plumage, yellow: belly and vent white.

Inhabits Africa. Mus. Nost.

Total length $5\frac{1}{4}$ inches; bill, base $\frac{4}{10}$; wings 3; tail, beyond, $\frac{2}{10}$; ditto, base $2\frac{1}{2}$; depth of the fork $\frac{3}{10}$; tarsus $\frac{6}{10}$; hind toe and claw $\frac{11}{20}$. Fore part of the entire head, as far as the ears, dingy but glossy yellow, graduating into the clear cinereous, which extends from the nape to the interscapulars, and round to the sides of the throat and breast: lores dusky: the yellow of the breast becomes brighter as it descends, and leaves the belly and thighs white: edges of the quill and tail feathers bright yellow. Claws long, and very slender.

111. Crithagra *strigilata*.

Above, greyish olive, striped with dusty: rump and

tail covers greenish yellow: sides of the head grey brown, with two whitish stripes — one above the eyes, the other beneath the ears: body beneath, with dusky stripes: belly white: inner wing covers yellow.

Inhabits South Africa. Mus. Nost.

Size of *C. canicollis*. Although I have two specimens of this obscurely coloured species, apparently male and female, I do not feel sure that either are in very perfect plumage. It is, however, quite distinguished, as a species, by the white longitudinal bands on the sides of the head, and the brown stripes on the under plumage: the ground colour of this latter is (in one sex) grey yellow, whitish only on the throat and vent; in the other it is white, with the brown stripes smaller and much darker.

112. Crithagra *bistrigata*.

Above, bright rufous; beneath, white: head, throat, and stripe on each side of the breast, deep black: wings black: tail rufous.

Inhabits South Africa. Mus. Nost.

Size of *C. ruficauda*; but the bill is proportionally much larger, which precludes the idea of these two being different sexes. Total length 4¼ inches; bill, gape $\frac{7}{20}$; wings $2\frac{7}{10}$; tail, from the base 2; tarsus $\frac{1}{2}$; middle toe and claw $\frac{6}{10}$; hinder ditto $\frac{9}{20}$. This, like *C. ruficauda*, is disguised in the plumage of *Pyrrhulauda*. The sides of the neck are pure white, which forms a sort of collar half round the nape: the black of the throat descends to the breast, and then is divided into stripes, which branch off obliquely to the flanks: the quills and part of the covers are deep black: under tail covers and thighs tinged with rufous: bill pale: claws brown.

113. Crithagra *canaria*.

Above, grey, with darker spots: face, throat, breast, shoulders, and rump, yellow: tail distinctly forked.

Inhabits Madeira.

Total length $5\frac{1}{2}$ inches; bill, gape $\frac{3}{10}$; wings $2\frac{2}{10}$; tail, beyond, $1\frac{2}{10}$; ditto, base $2\frac{2}{10}$; tarsus $\frac{6}{10}$; hind toe and claw $\frac{5}{10}$; middle ditto $\frac{11}{10}$. Sir W. Jardine obliged me with a native specimen of this bird, to which I have thought it preferable to retain the name by which it is so universally known in a domesticated state, particularly as Linnæus expressly states the *F. butyracea* is a native of India.

114. Crithagra *flava*.

Above, green: frontal band, spot on the ears, and all

the under plumage, bright yellow, immaculate. Tarsi rather lengthened.

Inhabits South Africa. Mus. Nost.

Total length $6\frac{1}{4}$ inches; bill, gape $\frac{11}{20}$; wings 3; tail, beyond, $1\frac{2}{10}$; ditto, base $2\frac{1}{2}$; tarsus $\frac{13}{20}$; hind toe and claw $\frac{1}{2}$. Size of *C. strigilata*. There are a few dusky stripes on the rich and full yellowish green plumage of the upper parts: the sides of the head are green, with an interrupted maxillary stripe of yellow; while the yellow frontal band is extended over the eyes and ears: wings and tail brown; the latter almost even.

115. Crithagra Selbii. *Smith.**

Cinereous grey, striped above, and immaculate beneath: rump yellow: middle of the throat, belly, and vent, white: sides of the head striped. Ill. of Orn. 109. f. 2.

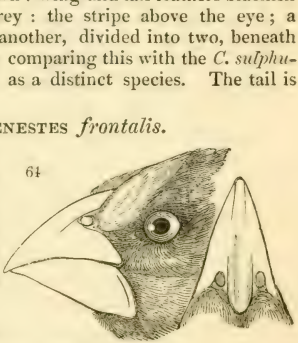
Inhabits South Africa. Dr. Burchell. Smith.

Size of a sparrow. Total length $5\frac{3}{4}$-6 inches; bill, large, thick, $\frac{1}{2}$ inch from the gape; wings $3\frac{1}{10}$; tail, beyond, $5\frac{1}{4}$; ditto, base $2\frac{1}{2}$; tarsus $\frac{3}{4}$; hind toe and claw $\frac{1}{2}$. Stripes on the crown, and spots on the back, dark brown: wing and tail feathers blackish brown, edged with light grey: the stripe above the eye; a small spot beneath it; and another, divided into two, beneath the ears; are all white. On comparing this with the *C. sulphurata*, I cannot but view it as a distinct species. The tail is short, and almost even.

116. Pyrenestes *frontalis*.

Dark chestnut brown: front, and spot on the wings, pure white (male): under plumage, in the female, whitish, striped with brown: frontal spots obsolete. (*fig.* 64.)

64



Inhabits Southern Africa. Dr. Burchell's Coll. No. 410.

Total length about 7 inches; bill, gape $\frac{7}{10}$; wings 3; tail $\frac{8}{10}$; from the base 3; tarsus hardly 1; hind toe and claw $\frac{8}{10}$. This remarkable species differs from that † which I have considered the type of this subgenus, in having the culmen curved; yet, as the bill is perfectly entire, and the whole structure of

* Since the above was written, I find this species has been described by Dr. Smith, and named in honour of our mutual friend, Mr. Selby; the name, therefore, of *cinerea*, by which I designated it in a former volume, must be cancelled.

† *Pyrenestes sanguineus*, Birds of W. Af. i. pl. 9.

the bird, in other respects, is strictly the same, I consider it as an aberrant species, assuming the arched culmen of *Coccoborus*.

117. SPHECOTHERES *canicollis*.

Olive: chin, neck, and breast, cinereous; crown and ears, glossy black; middle of the body, and half of the outer tail feather, white.

Inhabits Australia. Mus. Nost.

Total length 10 inches; bill, gape, $1\frac{1}{4}$; front $\frac{8}{10}$; wings 6; tail, beyond, $1\frac{1}{2}$; base $4\frac{1}{2}$; tarsus $\frac{9}{10}$. Lores and sides of the head, naked; no feathers between the bill and ears: bill strong and black: legs very pale. The crown and front is deep glossy black, which extends to the ears, and then blends into a dark uniform cinereous, which spreads over the neck, chin, and throat; blending unto the olive green on the breast and flanks: the middle of the body, from the breast to the under tail covers, is cream coloured white; all the quill feathers are black, but the greater have a narrow cinereous border, and the rest are broadly margined with the olive green of the upper plumage. The tail is olive brown, changing to cinereous upon the outer feathers; but the last of all is white, excepting the basal half of the inner web, which is deep black. In the female, or young bird, the chin and middle of the throat and breast are varied with white; the crown is brown, and the white on the belly more pure. The true *S. viridis* is described in Linn. Tr. xv. 215., and figured in the Atlas to Quoy and Gaimard, Voy. pl. 21.

118. AGAPORNIS *cyanopterus*.

Green: wings blue; the ends of the primary quills, the middle of the lesser covers, and the scapulars, green: lower part of the back, rump, and inner wing covers, blue. Female entirely green. *Psittacus passerinus* of Authors.

Inhabits Brazil.

Differs from the *P. passerinus* of Authors *, in having the quills and all the inner wing covers blue. Total length $4\frac{1}{2}$ inches; wings $3\frac{1}{4}$, as long as the tail.

119. AGAPORNIS *Guianensis*.

Green: spurious quills and inner wing covers amethystine blue: outer margin of the shoulders light green: greater wing covers tinged with bluish. Female entirely green. *P. Capensis*, Auct. Pl. Enl. 455. f. 1.

The smallest parrot of Demerara, where it is found in large flocks. Size of the last.

120. CONURUS *chrysophrys*.

Green: circle round the orbits, and lower part of the

* Founded on Edwards, pl. 235.

belly, golden yellow: front, ears, throat, and breast, drab or fulvous brown: body, beneath, greenish yellow.

Inhabits the interior of Guiana. Mr. Schomburgh.

Total length 8½ inches; bill, gape $\frac{7}{10}$; wings $5\frac{2}{10}$; tail, beyond, 2; ditto, base 4½.

121. Centropus *Burchellii*.

Above, cinereous; beneath, whitish: crown, nape, and ears, black: feathers of the neck and interscapulars with a central white stripe, margined with black: rump and upper tail covers transversely lineated with greyish white and black: tail black, tipt with white; the feathers lineated at their base.

Inhabits South Africa. Dr. Burchell's Coll. 412.

Total length about 13 inches; bill, gape $1\frac{4}{10}$; wings 7; tail, beyond, 5; from the base 9; tarsus $1\frac{4}{10}$; hind toe and claw 1¾. Closely resembles *C. Senegalensis*; but is rather larger, and distinguished by the white stripes and the narrow bars on the upper plumage: the shafts of the neck feathers are remarkably thick.

122. Crotophaga *lævirostra*.

Entirely black: feathers of the body with a slight marginal gloss. Bill with the culmen smooth. (*fig.* 65. *a*)

Inhabits Brazil.

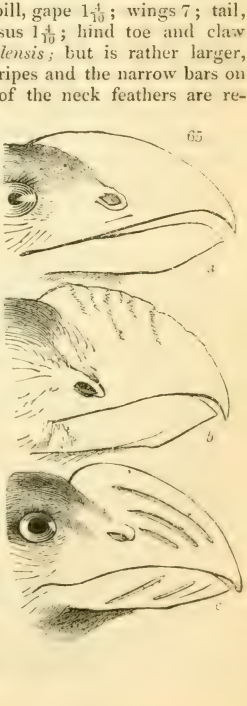
Total length about 14½ inches; bill, from the gape $1\frac{1}{10}$; wings $6\frac{2}{10}$; tail, beyond, about 4½; tarsus $1\frac{2}{10}$.

123. Crotophaga *rugirostra*.

Entirely black: feathers of the body with glossy margins. Bill with the culmen and sides transversely wrinkled. (*fig.* 65. *b*)

Inhabits Southern Brazil.

A slight degree smaller than the last. The sexes are similar, and both have been hitherto confounded as one species.



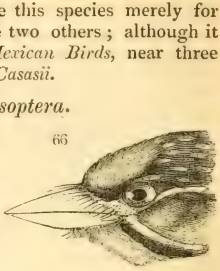
124. Crotophaga *sulcirostra*.

Entirely black: feathers of the body with glossy margins. Bill with the sides longitudinally grooved. (*fig.* 65. *c*)

Inhabits Mexico. Mus. Nost.

Smaller than the last. I introduce this species merely for the purpose of comparison with the two others; although it was described in my *Synopsis of Mexican Birds*, near three years before M. Lesson called it *C. Casasii*.

125. Bucco *chrysoptera*.


66

Above, black, striped with yellow; beneath, yellowish white: frontlet crimson: chin yellow: ears black, margined with white: wing covers, and margins of the lesser quills, golden yellow. (*fig.* 66.)

Inhabits South Africa. Dr. Burchell's Coll. 332. m.

Size very small. Total length $4\frac{1}{3}$ inches; bill, from the front, hardly $\frac{1}{2}$; wings $2\frac{3}{10}$; tail, beyond, $\frac{1}{2}$; ditto, base $1\frac{1}{2}$; tarsus $\frac{6}{10}$.—*Obs.* Rather larger than *B. chrysocomus*: the yellow stripes on the back are only on one side of each feather.

126. Geobates *brevicauda*.

Ferruginous above; paler beneath: breast with darker shades and obsolete brown stripes: wings rufous; primary quills, with the base, tips, and band in the middle, black; secondaries brighter rufous, with a broad black band before the tips: inner wing covers bright rufous: tail with a black band.

Inhabits Southern Brazil. Very rare. Mus. Nost.

Small. Resembling an *Anthus*, or *Furnarius*. Tertial quills blackish brown, paler on the margins. Crown and ears dark: chin, lores, and eye stripe, whitish: legs pale. Total length $4\frac{8}{10}$ inches; bill, from the gape $\frac{8}{10}$; wings 3, as long as the tail; tail, from the base $1\frac{8}{10}$; tarsus $\frac{7}{10}$; hind toe and claw $\frac{4}{10}$; middle ditto almost $\frac{7}{10}$.

127. Thryothorus *genibarbis*.

Above, rufous: sides of the head black: stripe over the eye, and another at the base of the lower jaw, white: chin snowy, bordered by a black line, gradually

changing on the throat to pale fulvous, and on the body and vent to rufous: wings unspotted: tail dusky, banded with black.

Inhabits Brazil. Rare. Mus. Nost.

Size of *T. rutilus*. Total length 5½ inches; bill thick, strong, $\frac{8}{10}$; ditto, from the nostril $\frac{6}{10}$; wings 2½; tarsus $\frac{9}{10}$; tail, base $2\frac{3}{10}$. Wing covers unspotted: a few obscure transverse lines on the tertial quills; fourth, fifth, and sixth quills longest: lores black: the maxillary stripe is white, bordered beneath by a deep black line: ears striped with white.

128. Platyurus *niger*.

Entirely sooty black. Tail short.

Inhabits Chili. Mr. William Hooker's Collection.

Size of a wren. Total length about 4 inches; bill, gape ½; wings 2; tail short, almost hid by its covers, and about 1 inch from the base; tarsus $\frac{6}{10}$; hind toe and claw $\frac{6}{10}$. Feet pale: bill black.

129. Geositta *anthoïdes*.

Dark brown above; paler beneath: chin and upper tail covers dull white: breast with blackish stripes: lesser quills ferruginous, with a black central band.

Inhabits Chili. Mr. W. Hooker's Collection.

Total length 6 inches; bill, front $\frac{7}{10}$; wings 3½; tail, beyond, ½; tarsus $\frac{8}{10}$; hind toe $\frac{3}{10}$; its claw $\frac{3}{10}$. Bill much rounded above: the under plumage is uniform cream colour, which is only broken by dusky stripes, as in the larks (one on each side each feather), upon the breast: lateral tail feathers black, but ferruginous at their base; lesser quills ferruginous, with a broad blackish band towards their middle; the greater quills ferruginous only on their inner shafts; tertials nearly as long as the primaries; outer tail feather edged with white: bill and legs brown.

130. Dendrophila *flavipes*.

Bill and feet yellow: upper plumage cærulean blue, varied with black; lower, from the chin to the body, pure white: crown, ears, nape, and belly, deep black.

Inhabits India. Mus. Nost.

Total length nearly 5 inches; bill, gape $\frac{7}{10}$; wings 3; tail, base $1\frac{3}{4}$; hind toe and claw $\frac{7}{10}$; middle toe and claw the same. This is a most beautiful bird. The greater covers of the wings are deep black, with a long oval stripe or spot of pale

blue in the middle, extending their whole length; and the quills are black, broadly edged with the same tint of blue; the lateral tail feathers are black, tipt with blue; and the upper and under tail covers entirely blue: the bill and feet seem to be pure yellow; the former tipt with black. I conclude this may be the *Sitta cærulea*, slightly indicated in the *Traité d'Orn.*; a name I do not adopt, because *blue* is the prevalent colour of the whole division.

131. Oxyurus *ornatus*.

Above, brown; beneath, white: greater wing covers black, tipt with white: quills and tail black, varied with rufous. *Synallaxis Tupinieri?* Lesson, Voy. 29.

Inhabits Chili. Mr. W. J. Hooker's Collection.

Total length 5 inches; bill, front $\frac{1}{2}$; wings $2\frac{1}{2}$; tail, beyond, $1\frac{1}{2}$; ditto, base $2\frac{1}{3}$; tarsus $\frac{3}{4}$. Middle of the head, crown, and nape, black, bordered by a broad stripe of buff on each side, which meet in front of the nostrils: lores black: the buff stripe is bordered by another of deep black, which includes the ears, and extends nearly down the sides of the neck: fore part of the back brown, changing to bright rufous on the rump and tail covers: wings black; lesser covers tipt with dull buff; the greater with a spot of pure white: spurious wings deep black: greater quills with an oblique bar of rufous; lesser with another bar, much paler, more buff-coloured, and nearer to the tips: scapular covers edged with buff at their base: tail black, with broad tips of rufous: scapular feathers near the base of the wing brown, with a black border: under plumage pure white from the throat to the breast, beyond which it changes into fulvous, which is darkest on the under tail covers. — *Obs.* The *Sylvia spinicauda* of Authors * seems to be a second species of this genus, which is obviously between *Certhia* and *Dendrocolaptes*. The feet perfectly resemble the latter.

132. Furnarius *melanotis*.

Above, rufous; beneath, whitish: crown and ears blackish brown: first and second quills internally rufous, crossed with three black bands: spurious wings and tail rufous, unspotted: feet black.

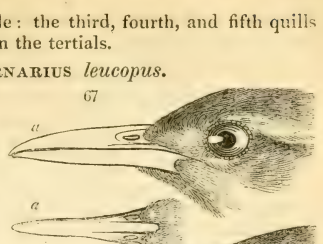
Inhabits the interior plains of Bahia, Brazil. Mus. Nost.

General size and structure of *F. leucopus*, but rather smaller. Above the eye and ears a broad fulvous white stripe, which almost meet on the nape: secondary quills with a black

* Latham. Syn. pl. 52. I have just procured another species.

internal spot in the middle: the third, fourth, and fifth quills equal, and not longer than the tertials.

133. Furnarius *leucopus*.



Above, rufous: throat, and body beneath, white: top of the crown, and nape, blackish brown: breast rufous white: spurious wings and first quill feather entirely black: feet very pale, almost white. (*fig.* 67. *a*)

Inhabits Guiana, where it frequents the sides of rivers.

Total length $6\frac{1}{2}$ inches; bill, front $\frac{7}{10}$; ditto, gape 1; wings $3\frac{3}{10}$; tail, beyond, $1\frac{4}{10}$; ditto, base $2\frac{3}{10}$; tarsus 1; hind toe and claw $\frac{7}{10}$. The *F. rufus* of Brazil, but rather smaller: bill straighter. Greater quills blackish, with an oblong rufous band, and rather longer than the tertials: ears, above, dark. The wings are much rounded, so that the fifth quill is the longest.

134. Furnarius *griseus*.

Above, grey brown, varied with transverse darker shades on the wings; beneath, white: crown and nape black: above the eye a white stripe, bordered below by a black one: tail black, with a white band before the tip.

Inhabits the savannahs of Guiana. (*fig.* 67. *b*)

Total length $8\frac{1}{2}$ inches; bill, front 1; ditto, gape $1\frac{1}{4}$; wings $3\frac{1}{2}$; tail, beyond, $2\frac{1}{2}$; ditto, base $3\frac{1}{2}$; tarsus $1\frac{1}{10}$; hind toe and claw $\frac{8}{10}$. The ground colouring of this singular species is very peculiar, and difficult to be described, owing to the feathers of the body and wings being brown, mottled towards their extremities either with grey or a dirty drab colour; these again, upon the wing covers and tertials, are crossed by indistinct dusky bars: the head and nape are brownish black, bordered by a conspicuous white band from the nostrils to the nape, over the eye; below which, on the ears, is another of black: the white on the sides of the neck forms a sort of half-collar below the nape: two middle tail feathers black brown; the rest black, with a broad white oblique band, leaving the tips partially black: bill and feet horn colour.

135. Philedon *buceroïdes*.

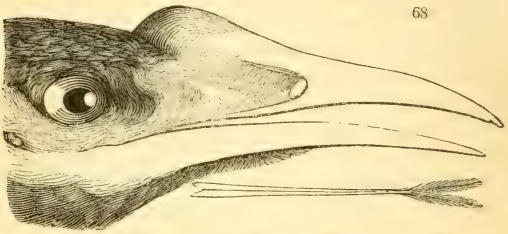
General size and colours of *Philedon corniculatus*.

Sides of the head as far as the ears, and a spot on each side of the neck, naked: crown of the head, chin, and nape, covered with feathers: culmen continued in an elevated ridge on the front, where it abruptly terminates.

Inhabits New Holland. Paris Mus.

Having mislaid the description I made of this singular bird, I cannot give further particulars. It has been evidently confounded with the common species, since it bore the name of *Merops corniculatus* in the French museum, where the other did not then (1828) exist. The state of the specimen enabled me to make a drawing of the tongue, which has hitherto been entirely unknown. The annexed cut is of the natural size.

68



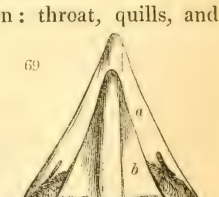
136. Eurystomus *Australis*.

Sea green: crown grey brown: throat, quills, and base of the tail feathers, vivid blue: six of the greater quills with a greenish white basal band.

Inhabits New Holland.

Smaller than *E. orientalis*. The bill is less compressed, and therefore much broader. The colours are lighter, but the wings much bluer; the spurious wings are entirely vivid blue, as well as the outer webs of the quills; while in *orientalis* these parts are almost black. (*fig.* 68. *a*)

69



137. Eurystomus *orientalis* Auct.

Sea green: crown black: throat blue: quills black; the base of four with a bluish green band. Pl. Enl. 619.

Inhabits India. (*fig.* 69. *b*)

The above specific character will immediately distinguish this well-known species from the foregoing.

138. Tamatia *bitorquata.*

Above, brown, spotted with whitish; beneath, buff yellow: frontal line, ears, and nuchal collar, white: breast and sides with a broad black collar, below which is another of black spots: bill black.

Inhabits Trinidad. Mus. Nost.

Total length $8\frac{1}{2}$ inches; bill, from the gape $1\frac{1}{2}$; wings $3\frac{1}{2}$; tail, beyond, $2\frac{1}{2}$; ditto, base $3\frac{1}{2}$; tarsus $\frac{6}{10}$. Allied to *T. maculata* and *somnolenta*, but much larger than either. Bill strong, thick, not much compressed; tip abruptly hooked: tail lengthened, graduated, brown, immaculate: flanks only spotted.

139. Galbula *ruficauda.*

Plumage above, and pectoral band, gilded blue green: body beneath, and lateral tail feathers, rufous: the four middle tail feathers green: chin and throat, in the male, white; in the female, pale rufous.

Inhabits Brazil.

Total length $8\frac{3}{4}$ inches; bill, front $1\frac{0}{10}$; wings 3; tail, beyond, $2\frac{1}{2}$; ditto, base $3\frac{3}{4}$. Four middle tail feathers green; two outer, on each side, more or less edged with green: bill black.

140. Galbula *viridicauda.*

Plumage above, and broad pectoral band, gilded blue green: tail shining blue green above, greenish black beneath: body, beneath, rufous: chin and throat, in the male, white; in the female, pale rufous.

Inhabits Guiana. Mr. Schomburgh.

Total length $8\frac{1}{2}$ inches; bill, front $1\frac{8}{10}$; wings $\frac{3}{10}$; tail, beyond, 2; ditto, base $3\frac{1}{2}$. The pectoral band is so broad as to reach half way down the body. Scape of the tail feathers rufous white: bill black.

141. Galbula *leptura.*

Plumage above, and pectoral band, gilded green, glossed with copper; body, beneath, rufous: tail long, graduated, rufous: the two middle tail feathers longest, and gilded green: chin and throat white.

Inhabits Guiana. Mr. Schomburgh.

Differs from *G. ruficauda* by its longer end more graduated tail, of which the two middle feathers only are green; and by having only a slight tinge of blue on the head. Total length $10\frac{1}{2}$ inches; bill, front $2\frac{3}{10}$; wings $3\frac{8}{10}$; tail, beyond, $3\frac{9}{10}$; ditto, base $4\frac{8}{10}$; middle feathers 2 inches longer than the external, and $\frac{3}{4}$ beyond the second pair. Is this the Rufous-tailed jacamar of Lath. ?

142. GALBULA *albiventer*.

Head, wings, and tail, dark blue green: back and scapulars reddish copper or flame colour: chin and ears greenish black: throat, vent, and under tail covers, white: breast, and body beneath, copper green. Tail slender, cuneated.

Inhabits Guiana. Mr. Schomburgh.

Total length 8 inches; bill, front $1\frac{4}{10}$; wings $2\frac{7}{10}$; tail, beyond, $2\frac{1}{2}$; ditto, base 4; two middle feathers $\frac{4}{10}$ longer than the others. The three lateral tail feathers on each side have a slight margin, on their inner web and tip, of white: the white upon the throat, which is very pure, is in the form of a transverse and somewhat triangular band. The tail feathers are narrow, and much graduated. The female has not been found.

143. GALBULA *flavirostra*.

Plumage, above, gilded green: front and crown glossed with reddish copper: beneath, rufous: (male with a white transverse band on the throat:) tail feathers shining green, tinged with rufous at the base: bill and feet fine yellow: upper mandible tipt with black.

Inhabits Demerara. Waterton. Schomburgh.

Total length $6\frac{3}{4}$ inches; bill, front $1\frac{4}{10}$; wings $2\frac{8}{10}$; tail, beyond, $1\frac{1}{2}$; ditto, base $2\frac{7}{10}$. — *Obs.* Differs from the *albirostris* of Authors, in *not* having the bill white; in *not* having pale rufous within the white of the throat; in the two outer tail feathers *not* being rufous on their side; and the legs *not* being black, but yellow. In both sexes the chin is pale rufous, but the female has no white on the throat; the tail is short, and the two outer feathers are alone graduated; the rest are all even.

144. GALBULA *armata*.

Feet three-toed. Plumage, above, blackish, glossed with dark blue green: front of the head striped with ferruginous: chin black: middle of the throat, breast, body, and vent, white: sides cinereous. Wings armed with a prominent tubercle: tail rounded.

Inhabits Brazil. Sw.

Total length $7\frac{1}{4}$ inches; bill, front $1\frac{6}{10}$; wings 3; tail, beyond, $1\frac{8}{10}$; ditto, base 3. — *Obs.* The feathers of the front, crown, tip of the chin, and of the maxillary stripe, are striped with pale ferruginous in the middle: the chin and half way down the throat is deep black, from whence begins the yellowish white which is in front of all the remaining under parts: the tubercles on the shoulder are very prominent; they are brown, and project beyond the feathers; those on the next and all the foregoing species, on the contrary, are so slight as scarcely to be seen.

145. Galbula *lugubris*.

Feet three-toed. Plumage, above and below, brown, glossed with obscure purple on the wings and tail: lower part of the body, and vent, white. Tail short, even.

Inhabits the Conocou mountains of Demerara. Mr. Schomburgh.

Total length 6 inches; bill, from the base $1\frac{7}{10}$; wings $2\frac{6}{10}$; tail, beyond, 1; ditto base, 2.—*Obs.* Feathers of the chin, in both sexes, whitish in the middle; wings, tail, and upper tail covers, glossed with dark and obscure greenish purple; head, neck, and breast, light brown, mottled by the tips of the feathers being paler; all the quill feathers pure white at their base; ears dark brown; all the tail feathers equal.

146. Trogon *melanurus*.

Head, body above, and breast, blue green: body, beneath, scarlet: tail, beneath, black, with minute white dots on the edge of the exterior feather. Male.—Female, cinereous: vent and under tail covers rosy: all the tail feathers blackish, immaculate. (Pl. Enl. 452. male; pl. 737. female.)

Inhabits Demerara. Mr. Schomburgh.

Total length 12 inches; bill, gape $1\frac{2}{10}$; wings 6; tail, beyond, $3\frac{3}{4}$; ditto, base, $6\frac{1}{10}$. Size large. Bill, in the male, yellow; in the female, brown above: two middle tail feathers (male) black, glossed with green blue; the two next edged only with green: wing covers and scapulars white, with very distinct undulated black lines: sides of the head, and chin, black.

147. Trogon *auratus*.

Head, breast, and body above, gilded green: body

beneath, scarlet: wing covers white, with distinct black undulated lines: three lateral tail feathers white, with about seventeen black transverse bars; the basal ones confluent; the tips white. Male.

The female is light fulvous brown where the male is green; and the belly pale rose colour: the three lateral tail feathers white, dotted with black in the middle, and almost entirely black towards their base; before the white tips is a distinct black bar; middle feathers rufous. Birds of Brazil, i. pl. 60, 61.

Inhabits Brazil. Mus. Nost.

Note.—More than one species being confounded under the old term of *collaris* (in itself unmeaning, as nearly all have collars), I have not adopted it.

148. Trogon *purpuratus*.

Head and breast rich purple: back, and middle tail feathers, green: body, beneath, crimson: wing covers whitish, with delicate, indistinct, undulated black lines: lateral tail feathers white and black; the exterior feather with about six distinct black bars beyond the base. Birds of Brazil, ii. pl. 63, 64.

The female cinereous where the male is green and blue: wing covers with distinct white undulations: body, beneath, rosy: lateral tail feathers black; the outer half white, with marginal black spots, the tips white; middle feathers cinereous black. Total length about $9\frac{1}{2}$ inches; bill, gape $\frac{9}{10}$; wings $4\frac{1}{2}$; tail, beyond, 3. Inhabits the Cotinga woods in the interior of Bahia, Brazil. Breast with a white collar: four middle tail feathers with a terminal black band, the rest black at their base: eyelids yellow, naked: upper tail covers bluish: bill pale. This is not the *variegatus* of Spix, as some have asserted; for the female of *that* is quite different from *this*, even according to Spix's own figure.

149. Trogon *chrysogaster*.

Head and breast blue, varying to greenish: back gilded green: body, beneath, golden orange: three lateral tail feathers white, with the bases black. Female unknown.

Inhabits Southern Brazil. Mus. Nost.

Total length $10\frac{1}{2}$ inches; bill, gape $\frac{9}{10}$; wings $5\frac{2}{10}$; tail, be-

yond, $3\frac{1}{2}$. This species seems to vary considerably in the tint of the upper plumage. Of three specimens now before us, one has the head, breast, rump, and four middle tail feathers, entirely purple; another has these parts slightly tinged with green; while the third has the breast, rump, &c. entirely dark green: in all other respects they are the same: the white freckles on the wing and scapular covers are fine and delicate, and the tail resembles that of *T. leucurus* (probably the *Surucura* of Azara).

150. Trogon *leucurus*.

Head and breast violet blue: back green: body, beneath, crimson, without a white pectoral bar: lateral tail feathers white, with their base black. Female cinereous: lower part of the body rose colour.

Inhabits Southern Brazil. Mus. Nost.

Total length 11 inches; bill, gape 1; wings 5; tail, beyond, $3\frac{1}{4}$. The wing covers of the male are very minutely reticulated with black upon a grey ground; the rump, and four middle tail feathers, strongly tinged with blue: the extent of the white on the outer portion of the lateral tail feathers varies, but it is always pure and unbanded. In the female, the white lines on the wing covers are very regular and distinct, and $\frac{1}{10}$ of an inch apart: the grey of the breast extends half way down the body.

151. Trogon *lepturus*.

Outermost tail feathers attenuated and pointed; the three exterior pair banded and tipt with white: head, neck, and breast, blackish: back, rump, and tail covers, gilded green: body, beneath, yellow. — Female, fulvous brown: body, beneath, pale yellow.

Inhabits Cayenne. Mus. Nost.

Total length of the female $10\frac{1}{2}$ inches; bill, gape $\frac{17}{20}$; wings $4\frac{1}{2}$; tail, beyond, 4; ditto, base 6. Of this singular species, remarkable for the attenuated form of the outer tail feather, and even of the next to it, I have only seen the female, which is probably that figured on Pl. Enl. 736.; although the ground colour of the wing covers, in my specimen, is nearly of the same brown as the back. The male is described in Sonnini's Buffon, xvii. 330., from which work I have framed its specific character in regard to colour; and it is figured on Pl. Enl. 195., where the narrowed form of the lateral tail feathers is tolerably well preserved.

152. Trogon *meridionalis.*

Small. Above, green: head and breast blue: body, beneath, yellow: lateral tail feathers closely and regularly banded with white and black: wing covers dark cinereous.

Inhabits the Bahama, and other neighbouring islands. Mr. Lees. Mus. Nost.

The smallest of the genus. Total length $8\frac{1}{2}$ inches; bill, gape $\frac{9}{10}$; wings $4\frac{3}{10}$; tail, beyond, $2\frac{3}{10}$; ditto, base 5. The female is cinereous, with distinct white transverse lines on the wing covers. I have never seen specimens of this species either from Brazil or Cayenne, nor do I believe it is found in either of those countries; it is much more probable that authors have mistaken the Cayenne yellow-bellied species, here named *lepturus*, for our *meridionalis*, whose geographic range, I suspect, is chiefly, if not exclusively, confined to the West India islands, where it is very common.

153. Trogon *melanopterus.*

Above, green; beneath, yellow: head and breast violet: wing covers entirely black: lateral tail feathers black, broadly and obliquely tipt with white.—Female, cinereous, with a yellow belly, lineated wing covers, and the lateral tail feathers barred with black.

Inhabits Brazil. Mus. Nost.

Total length nearly 11 inches; bill, gape $1\frac{2}{10}$; wings $5\frac{1}{2}$; tail, beyond, $3\frac{1}{2}$. I was at considerable trouble, when in Brazil, in ascertaining that these very different coloured birds were sexes of the same species; for all authors, before the publication of the above specific name, had considered them distinct. It is a very local species, and by no means so common in Brazil as some have asserted.

154. Prionites *Bahamensis.*

Crown and head as in *P. Braziliensis:* body above, wings, and tail, blue green: under plumage, from the chin to the vent, deep brownish rufous; the sides tinged with green.

Inhabits the Bahama Islands. Mr. Lees.

Total length $15\frac{1}{4}$ inches; bill, front $1\frac{1}{2}$; wings $5\frac{2}{10}$; tail, beyond, $6\frac{3}{4}$; ditto, base $8\frac{3}{4}$; tarsus 1. Tail feathers 12, the middle pair racket-shaped. Smaller than *P. Braziliensis;* with

the whole under plumage rufous, except the usual black stripe on the breast; and the thighs, which are green. (Can this be the Brazilian *P. Martii?*)

155. Egretta *scapularis.*

Crest, and body above, sea green; beneath, cinereous: neck cinereous; the front white, with two macular ferruginous stripes, and a few black spots. Lateral toes equal.

Inhabits Brazil. *Ardea scapularis,* Illiger. Wagler.

Total length about 18 inches; bill, front $2\frac{1}{2}$; wings $6\frac{9}{10}$; tarsus 2; middle toe and claw $2\frac{1}{10}$; bare space above the knee $\frac{7}{10}$; lateral toes, with their claws, $1\frac{6}{10}$. So much confusion exists in our systems regarding the small green-backed egrets, that I have been obliged to draw up new specific characters for the whole. M. Wagler, in his monograph of the old genus *Ardea,* has confounded no less than three under the name of *scapularis,* a species which seems peculiar to Tropical America: its prototype in Africa is our *E. thalassina;* and Dr. Horsfield's *Javanica* represents it in India. The remarkable variation in the relative length of the toes offers conclusive evidence of their specific differences: they obviously lead immediately into the subgenus *Butor.*

156. Egretta *virescens.*

Crest, and body above, sea green; beneath, grey: neck deep chestnut; the fore part white, spotted and striped with blackish. Inner toe shorter than the outer.

Inhabits North America. Wilson, vii. pl. 61. f. 1. Wagler, 36.

Distinguished from *scapularis* by its unequal toes; and from the two following by the deep rufous of the neck. Length of the bill, from the front $2\frac{1}{2}$; wings $7\frac{4}{10}$; tarsus $1\frac{8}{10}$; naked space above the knee $\frac{8}{10}$; middle toe and claw $2\frac{1}{10}$.

157. Egretta *thalassina.*

Crest, and body above, sea green: neck, and body beneath, cinereous: the front of the throat white, tinged with ferruginous, but without spots. Inner toe and claw slightly shorter than the outer.

Inhabits Senegal. Mus. Nost.

Resembles *scapularis,* but it is smaller; the throat has no distinct spots or stripes, and the inner toe is the shortest. Bill,

from the front $2\frac{3}{10}$ inches; wings $6\frac{1}{2}$; tarsus $1\frac{7}{10}$; middle toe and claw the same; naked space above the knee hardly $\frac{4}{10}$.

158. Egretta *Javanica.*

Resembles *E. scapularis;* but the thighs are nearly feathered to the joint, and the inner toe is much the shortest.

Inhabits Java. *Ardea Javanica,* Horsf. Lin. Tr. xiii. p. 326.

Not having an adult specimen of this species, I can only point out its peculiar characters. In its general dimensions, it appears much the same as *scapularis;* but the tarsi and toes are much shorter, the inner toe is conspicuously shorter than the outer, and the naked space above the knee is hardly $\frac{2}{10}$ of an inch. Length of the bill $2\frac{1}{2}$ inches; wings 7; tarsus $1\frac{7}{10}$; middle toe and claw $1\frac{6}{10}$.

159. Egretta *plumbea.*

Small: scapulars entire: inner toe longer than the outer. Plumage dark lead colour: throat white, with a central black stripe: lower neck and breast feathers half black, half creamy: body and vent striped with fulvous and dark cinereous.

Inhabits Senegal: probably the *Ardea Sturmii* of Wagler, imperfectly described.

Size of *scapularis.* Feathers on the sides of the body broadly striped on each side with ferruginous: bill deep black: legs pale brown. Bill, front $1\frac{6}{10}$ inches; wings $6\frac{1}{4}$; tarsus $1\frac{6}{10}$; middle toe and claw $1\frac{8}{10}$; naked space above the knee $\frac{4}{10}$. It is by this species that the egrets blend into the bitterns; all of which have the inner toe longer than the outer, and the scapulars entire. This interesting bird forms the passage between *Egretta* and *Butor.*

160. Parra *atricollis.*

Rufous: chin, ears, and fore part of the neck, black: hinder part and rump white: quills black.

Inhabits India? Mus. Nost.

Total length 11 inches; bill, gape $1\frac{9}{10}$; wings $5\frac{1}{2}$; tarsus $2\frac{3}{10}$; hind toe and claw 3; middle ditto $3\frac{1}{2}$. Size and structure of *P. Africana.* Tubercle on the shoulder minute, yellow.

161. Rallus *sanguinolentus*.

Bill green, with a red spot at the base of the under mandible: plumage, above, olive brown; beneath, cinereous and unspotted: tail brown; the under covers black.

Inhabits Brazil and Chili.

Total length about 11 inches; bill, gape 2; wings 5; tarsus $1\frac{8}{10}$; middle toe and claw $2\frac{3}{10}$. Both mandibles of the bill slightly curved. There is no white on the chin, as in the next.

162. Rallus *cæsius*.

Olive brown: beneath, dark cinereous: tail feathers, and the upper and under covers, black: chin whitish.

Inhabits Brazil. *Gallinula cæsia?* Spix, Av. Braz. ii. p. 95.

Total length about 11 inches; bill, gape 2; wings 5; tarsus $1\frac{6}{10}$; middle toe and claw $2\frac{4}{10}$. Bill straight, green, the base yellowish: irides rufous: feet Indian red. In size and colour closely resembles the last; but the bill is less curved; and both the tail, and its upper and under covers, are deep black: the chin, also, is much whiter. I suspect these two have been confounded by more than one author.

163. Rallus *superciliosus*.

Front with a lateral white stripe before the eye: plumage, above, brown; beneath, cinereous: flanks banded. Tarsus $1\frac{1}{2}$ inch long.

Inhabits South Africa.

Total length about 12 inches; bill 2; wings 5; tarsus $1\frac{1}{2}$; middle toe and claw $2\frac{1}{10}$. Chin white: belly tinged with ferruginous: flanks black, with transverse white bands: the shorter or external under tail covers black, tipt with ferruginous; the inner or longer ones white, with terminal black bands: lower part of the back, and all the tail, black: feet and bill probably red in the live bird.

164. Rallus *neglectus*.

Plumage, above, brown; beneath, cinereous: sides of the body, flanks, and under tail covers, banded white and black. Tarsus $1\frac{1}{4}$ inch long.

Inhabits Brazil? Mus. Nost.

Closely resembles the last; but there is no white superciliary line; the bands on the flanks extend to the sides of the body; the wings are $\frac{1}{2}$ inch, and the tarsus is $\frac{1}{4}$ inch shorter. Total length about 10 inches; bill 2; wings only $4\frac{1}{4}$; tarsus $1\frac{1}{4}$; middle toe and claw $2\frac{1}{10}$. The under tail covers are black and white; those in the middle tinged with ferruginous. In both, the bill and feet are light brown, probably red in the live bird.

165. Rallus *brachipus*.

Head above, and half way down the neck, rufous, striped with black: the rest of the neck, back, rump, and tail, black, striped with olive: wings, and body beneath, banded with black and white: belly whitish: vent with a fulvous patch: chin white. Tarsus very short.

Inhabits Tasmania. Discovered by Adol. W. H. Humphrey, esq. Mus. Nost.

Total length about 10 inches; bill, gape $1\frac{4}{10}$; wings 4; tarsus $\frac{9}{10}$; middle toe and claw nearly $1\frac{1}{2}$. For the size of the bird, the sarsus of this and the next species is unusually short: the carpal spur is nearly obsolete. Just behind the vent, and at the base of the under tail covers, is a patch of clear fulvous or isabella: the whole of the body beneath (except the middle), as also the under tail covers, are strongly banded with white on a black ground: the sides of the head and neck are rufous, without any black stripes: the whole of the wings, with the sides of the breast and lower neck, are marked by white bands: bill pale brown: legs greenish.

166. Rallus *Lewinii*.

Head above, and all the upper parts of the body, black, striped with dark olive; under parts, cinereous grey: wings, and sides of the body beneath, with transverse white spots and bands: under tail covers isabella.

Inhabits Tasmania. Named in memorial of Lewin author of the first work on the Birds of Australia.

Total length about $8\frac{1}{2}$ inches; bill, gape $1\frac{5}{10}$; wings $4\frac{2}{10}$; tarsus 1; middle toe and claw $1\frac{1}{2}$. Size and general colour of the last; but there is no rufous on the head and neck, which are of the same colour as the back: all the under tail covers are isabella colour, although their bases are black.

167. Rallus *albiventer*.

Under tail covers white, immaculate: crown, and neck above, rufous: back and wings olive, with transverse white bars, edged with black: ears, breast, and under parts, cinereous: chin and belly white: flanks banded.

Inhabits India. *Gallinula gularis?* Gray. (plate unpublished.)

Total length 8½ inches; bill, gape 1$\frac{6}{10}$; wings 5; tarsus 1$\frac{4}{10}$; middle toe and claw 1$\frac{8}{10}$; hinder ditto $\frac{1}{2}$. I do not think this is the *G. gularis* of Latham, whose description does not appear to me to be applicable. It approaches very near to *R. brachypus* by its rufous crown and nape; but is known at once by its immaculate tail covers: the flanks only are banded with black and white; the belly and vent being almost pure white.

168. Gallinula *immaculata*.

Unspotted: crown and nape blackish cinereous, changing to chestnut brown on the neck, back, and wing covers, and to black on the tail: throat and under plumage uniform cinereous: under tail covers black, banded with white.

Inhabits Tasmania. Discovered by Adol. W. H. Humphrey, Esq. Mus. Nost.

Total length about 6½ inches; bill, front $\frac{7}{10}$; wings 3$\frac{4}{10}$; tarsus hardly 1; middle toe and claw 1$\frac{3}{10}$; hind ditto $\frac{1}{2}$. Remarkable for having no white upon the chin (which is nearly as dark as the throat), or any bands on the flanks: the edges of the shoulders are white: the deep chestnut of the neck blends into the dark cinereous of the head, and becomes nearly black as it approaches the tail: bill black: legs pale, perhaps red. The inner toe is slightly shorter than the outer.

169. Gallinula *curvirostra*.

Culmen and commissure of the bill curved. Plumage, above, olive, striped with black; beneath, cinereous: chin white: flanks and thighs brown, banded with whitish.

Inhabits —— ? Mus. Nost.

Total length 9 inches; bill, gape $1\frac{1}{10}$; front $\frac{9}{10}$; wings 4; tarsus, $1\frac{4}{10}$; middle toe and claw $1\frac{8}{10}$, hind ditto $\frac{11}{20}$. This is the only species I have yet seen, having the commissure regularly curved, and the culmen consequently more bent *downwards*, than the gonys is *upwards*. In other respects there is nothing remarkable in the structure or the plumage: the colours above are black, striped with olive on the side of each feather: the under tail covers are black, with a few interrupted bands of whitish: flanks and thighs greyish olive, with white transverse bands. Bill and legs greenish.

170. Gallinula *flavirostra*.

Entirely deep black: bill fine yellow: legs bright red.

Inhabits West Africa. Mus. Nost. *Rallus carinatus*, Classif. of Birds, Vol. I. p. 158. *fig.* 86. *c*, *d*.

Total length 7 inches; bill, front. nearly 1; wings $4\frac{3}{10}$; tarsus $1\frac{1}{2}$; naked space above the knee $\frac{4}{10}$; middle toe and claw 2; hinder ditto $\frac{9}{10}$. Confounded with one or two others, under the name of *R. niger*. Carpus ending in a small acute slender spur, $\frac{2}{10}$ of an inch long, curved inwards, and nearly hid in the feathers, but probably moveable in the live bird. I have reason to think the elevation of the bill, in the specimen figured as above quoted, is accidental, for another, since examined, had not this peculiarity. As the name of *carinatus* would, therefore, lead to error, I now substitute that of *flavirostra*. It seems to be one of the supposed varieties of *G. nigra*.

171. Gallinula *albifrons*.

Front of the chin, neck, breast, and body, white: sides of the head, neck, and breast, rufous: flanks banded with black and white: upper plumage olive brown.

Inhabits Brazil. Mus. Nost.

Total length about $5\frac{1}{2}$ inches; bill, front, $\frac{13}{20}$; wings 3; tarsus 1; middle toe and claw $1\frac{1}{2}$; hinder $\frac{11}{20}$; inner toe $\frac{3}{20}$ shorter than the outer. Bill greenish: legs pale: the rufous which is on the side of the head, ears, and neck, ceases at the breast; the body, belly, and thighs are cream coloured white, quite pure, but the under tail covers are deep rufous.

172. Alecthelia *lineata*.

Above, blackish, varied with numerous undulated transverse lines of light fulvous brown; beneath, whit-

ish, with black stripes on the neck and breast, and bands on the flanks and body : tail and its covers black, banded with ferruginous lines.

Inhabits South Africa ? Mus. Nost.

Total length 6½ inches; bill, gape ½; front $\frac{2}{20}$; wings 2$\frac{8}{10}$; tarsus $\frac{6}{10}$; middle toe and claw $\frac{9}{10}$. Lateral toes nearly equal. The whole plumage above is variegated with light fulvous, or isabella brown, which assumes the appearance of stripes on the head and neck, and then of undulated bands on all the remaining parts: the quills alone are free from spots, and are light sepia brown: the tail covers are long, silky, and are of the same colour and texture as the true tail feathers; these latter being placed edgeways, like those of a hen; and this, no doubt, is the true structure of the type, which obviously represents *Megapodius*. The chin is pure white, and the bill and feet pale.

173. Tachydromus *Orientalis*.

Total length 9½ inches. Upper part of the head, neck, throat, breast, and body, rufous, terminating in a black point in the middle of the body: upper tail covers white : wings 6 inches, and longer than the tail.

Inhabits India. In the Collection of the Countess of Dalhousie. Zool. Mus.

Total length 9½ inches; bill, front $\frac{8}{10}$; gape 1$\frac{1}{10}$; wings 6, projecting ½ inch beyond the tail; tarsus 2$\frac{2}{10}$; middle toe and claw 1$\frac{1}{10}$; naked space above the knee 1. I have considered this as distinct from the *T. Asiaticus* of Temminck * (the *Coromandelicus* of Lichenstein†), solely on the presumption that these two ornithologists *are correct* in stating that their species measures only 8 inches in total length, whereas this is 9½. It is only the upper tail covers, and not the rump also, which are white in this bird : the rufous of the breast goes on gradually contracting, and then terminates at the end of the abdomen in a black spot, leaving the sides of the body and the flanks of the same light drab brown as the back. If the above measurements of MM. Temminck and Lichenstein *are incorrect*, then I see no difference between their descriptions. Dr. Latham's ‡, and the bird before me, sufficiently strong to separate it from *Asiaticus*. Such brief descriptions, without measurements of all the parts, rather tend to confusion than to elucidation.

* Manuel, 2 ed. ii. p. 514.
† Hist. of Birds, ix. 353.
‡ Berlin Catal. p. 72.

174. Tachydromus *Burchellii*.

Front and fore part of the head rufous; hinder part and nape cinereous: crown bordered (behind the eye) with a pointed white collar, margined by black: upper plumage fawn colour: rump cinereous. Wings even with the tail.

Inhabits South Africa. Dr. Burchell's Coll. No. 155.

Intermediate in size between *T. Senegalensis* Lich. and *Asiaticus*. Total length about 8 inches; bill, gape $1\frac{1}{10}$; front $\frac{8}{10}$; wings $5\frac{3}{10}$; tail, base $2\frac{3}{10}$; tarsus $1\frac{6}{10}$. General colours of *Senegalensis*, but with the following differences:—The back has a greater tinge of rufous; and the termination of this colour, below the breast, is simply marked by a blackish shade: the secondary quills are light brown, and are all of them broadly tipt with white: the throat, breast, and middle of the body are of the same tinge as the back: the tail is cinereous; the outermost feather white, the base obliquely brown on its inner web only; the two next feathers cinereous, with a black bar and white tip; and the rest cinereous, more or less tipt with black only. The young bird is variegated with brown lines and light spots. Is this latter the *Erolia* (!) *variegata* shortly noticed by Vieillot?

175. Rhyncops *melanurus*.

Above, black: lesser quills tipt with white: tail brownish black; each feather margined externally with white: base of the bill, and feet, red.

Inhabits the coast of Demerara. Mr. Schomburgh.

Total length about 16 inches; bill (the under mandible from the gape) $3\frac{7}{10}$; wings 14, three inches longer than the tail; tail, base 5; depth of the fork $1\frac{1}{10}$; tarsus $1\frac{2}{10}$. Larger than the *R. borealis* (*niger* Auct.).

176. Falco *cucullatus*.

Upper plumage, and the whole of the head, except the middle of the chin, cinereous black: chin, throat, and breast, cream colour: body, beneath, black, with transverse white lines: belly, vent, and thighs, rufous.

Inhabits Brazil, Trinidad, &c. Mus. Nost.

Total length $9\frac{1}{2}$ inches; wings $7\frac{1}{2}$, equal with the tail; tail from the base 4; tarsus 1; middle toe and claw $1\frac{1}{2}$; inner

toe much shorter than the outer. Tarsus feathered beyond the knee. First quill longer than the third: inner wing covers black, with white spots. Tail short, even: quills and tail internally barred, with isolated white lines.

177. Falco *longipennis*.

Above: cinereous brown: crown, sides of the head: and ears, blackish: beneath, rufous white, striped and spotted with grey: wings as long as the tail: the latter with rufous bands on the inner web.

Inhabits Tasmania. Mus. Nost.

Size of the *Kestrel*. Total length hardly 12 inches; wings 9; nearly even with the tail; tarsus $1\frac{2}{10}$; middle toe and claw $1\frac{1}{2}$; outer ditto $1\frac{2}{10}$; inner much shorter; tail, base 5. First quill nearly equal to the third; the second longest. Inner wing covers grey, varied and spotted with pale rufous; quills, internally banded like the tail with pale rufous: chin and throat cream colour: the first quill only is emarginate on the inner web: front, lores, and base of the maxillary stripe, white.

178. Falco *macropus*.

Above, cinereous black, immaculate; beneath, fulvous white, striped with blackish: wings as long as the tail: feet very large: middle toe and claw much longer than the tarsus.

Inhabits Tasmania. Discovered by T. Winter, Esq.. Mus. Nost.

Form and structure of *F. cucullatus*. Total length near 16 inches; wings $12\frac{1}{2}$; tail, base 7; tarsus $1\frac{7}{10}$; middle toe 2; the claw $\frac{6}{10}$; total $2\frac{6}{10}$. A perfectly adult bird. The stripes beneath are dark and well defined; and there is no detached maxillary stripe. The ground of the under plumage is cream-colour: the inner covers with broad transverse bands, leaving cream-coloured spots between: the bill and feet are very large: the tail short, and nearly even.

180. Malaconotus *leucotis*.

Above, olive green; beneath, and stripe over the eye, yellow: crown, and two stripes on each side of the head, cinereous: stripe on the ears white.

Inhabits Africa? Mus. Nost.

Small. Total length hardly 6 inches; front $\frac{6}{10}$: gape $\frac{7}{10}$; wings $2\frac{1}{2}$; tail, beyond, 1; base 2; tarsus $\frac{8}{10}$. Tail rather short, and nearly even: the yellow eye stripe is very broad and bright, and passes as far as the nape: the white stripe on the ears is between the two grey ones Flanks and belly tinged with olive: middle toe very short.

179. Malaconotus *similis*.

Above, black: lores, lower part of the back, and plumage, beneath, greyish white: tips of the lateral tail feathers white.

Inhabits —— ? Mus. Nost.

Total length $6\frac{1}{4}$ inches; bill, front, $\frac{1}{2}$; gape $\frac{8}{10}$; wings 3; tail, base 3; tarsus $\frac{9}{10}$. Closely resembling in structure and colour *M. mollissimus;* but is smaller in all its proportions except the legs, which are longer: the lores are grey, not black; and the long rump feathers are dark cinereous beneath, not pure white: the tail much shorter, and the lateral feathers tipt with white.

181. Oriolus *coronatus*.

Crown of the head yellow: incircled by a narrow black band, round the nape: quill feathers, and spurious quills, edged with yellow.

Inhabits Java. Mus. Nost.

Total length $9\frac{1}{2}$ inches; bill, front, $1\frac{2}{10}$; wings $5\frac{3}{10}$; tail beyond, 1; base $3\frac{1}{2}$; tarsus $\frac{8}{10}$. Smaller than *O. Sinensis* (Pl. Enl. 570.), with which it has been confounded, and differs by having the whole of the crown, and not the front only, yellow: the black band only passes round the nape.

182. Gryllivora *rosea*.

Glossy black: body, beneath, stripe on the wings, and four lateral pair of tail feathers, rosy.

Inhabits India. Mus. Nost.

Total length $7\frac{1}{2}$ inches; bill, front $\frac{7}{10}$: wings $3\frac{6}{10}$; tail, base $3\frac{1}{2}$. Smaller than *G. intermedia;* the wings being near half an inch shorter, but the bill is rather longer; *four*, instead of *three* of the tail feathers, on each side, are white, or rather rosy, as are all the light parts of the plumage. Until there is positive evidence that this, and the three preceding, are varieties, I must consider them as species.

183. ORTHOTOMUS *longirostris*.

Cinereous: beneath, whitish: head, chin, and thighs, ferruginous: throat black: tail brownish, graduated; the latter with dusky black ends, tipt with whitish.

"S. W. coast of Australia. M. Labillardiere." Mus. Paris.

Total length $4\frac{1}{2}$ inches; bill, gape $\frac{8}{10}$; wings $2\frac{1}{10}$; tail, beyond, 1; base $1\frac{4}{10}$; tarsus $\frac{9}{10}$. Sides of the body cinereous, the middle white: bill and legs pale. Allied to the *O. sepium* (Horsf.) of Java, but has no olive above, or yellow beneath. (See Class. of Birds, Vol. II. p. 62. *fig.* 135.)

184. ORTHOTOMUS *sphenurus*.

Olive yellow above; white beneath: hind head and nape brown: front and crown rufous. Tail slender, cuneated; the lateral feathers very narrow and obtuse; the two middle pair lengthened and pointed.

Inhabits India. Mus. Nost.

Total length nearly 6 inches; bill, gape $\frac{3}{4}$; front $\frac{1}{2}$; wings $1\frac{8}{10}$; tail, base 3; middle feathers beyond the others 1; tarsus $\frac{7}{10}$. Upper plumage bright olive yellow: ears and lores white: bill and legs pale.

185. PRATICOLA *anthoïdes*.

Above, olive; beneath, ocracious: each feather striped in the middle with black: lores and eye stripe fulvous: lateral tail feathers with a penultimate black band.

Inhabits Tasmania. Mus. Nost.

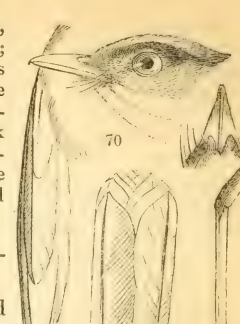
Total length $5\frac{1}{2}$ inches; bill, gape $\frac{13}{20}$; front nearly $\frac{1}{2}$; wings 2; tail, base $2\frac{3}{10}$; tarsus $\frac{8}{10}$; middle toe and claw $\frac{7}{10}$; hind toe $\frac{4}{10}$; its claw $\frac{7}{20}$. The black stripes, which are broad on the upper plumage, are very narrow on the under: the tail has a rufous tinge, and the middle feathers have a black central stripe; they are all graduated and marked as in *Orthotomus*.

186. CRYPTOLOPHA *auricapilla*.

Olive green above; yellow beneath: crown of the head fulvous yellow, bordered on each side by a broad black stripe. (*fig.* 70.)

Inhabits India. Linnæan Society's Museum.

Total length 4 inches; bill, gape $\frac{1}{2}$; front $\frac{7}{20}$; wings $2\frac{1}{10}$; tail, beyond $\frac{7}{10}$; base $1\frac{7}{10}$; tarsus $\frac{13}{20}$; hind toe and claw $\frac{4}{10}$. The crown resembles that of the *Seisurus auricapillus*, but the black stripes are darken, they widen behind, and then end abruptly: the yellow is deepest on the belly and in the middle of the body.



187. Erythrostomus *cyanogaster*.

Bright green: body, and belly beneath, rich purple blue, glossed with lilac: tail lengthened, rounded, tipt with purple.

Inhabits Brazil. Mus. Nost.

Total length nearly 12 inches; wings $6\frac{1}{4}$; tail, beyond, 3; base 5; tarsus $\frac{4}{10}$; middle toe and claw 1. Second and third quills equal, and longest; the first tinged with blue. This beautiful species may, probably, have been described on the Continent; but it is very rare, even in Brazil.

188. Eidopsaris *bicinctus*.

Body, above, grey; beneath, paler: middle of the back, and sides of the tail, olive: nape, sides, and upper part of the head, black, with a broad crescent-shaped band of white uniting the eyes.

Inhabits Tasmania. Sent by Thomas James Lempriere, Esq. Mus. Nost.

Total length 6 inches; bill, gape $\frac{8}{10}$; front $\frac{6}{10}$; wings 3; tail, beyond, $1\frac{1}{2}$; base $2\frac{3}{4}$; tarsus $\frac{8}{10}$. The plumage above, and on the sides of the neck and breast, is cinereous grey: the region of the chin is pure white: the nape may be said to have two bands, — the first of white, the second of black.

189. Eudynamis *Australis*.

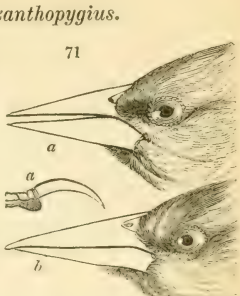
Entirely black. The bill yellow. Wings nine inches long.

Female. — Spotted: the third quill longest.

Inhabits Australia. Mus. Nost.

Total length 18 inches; bill, gape $1\frac{4}{10}$; front 9; tarsus $1\frac{2}{10}$; hind toe and claw $\frac{8}{10}$; middle ditto $1\frac{8}{10}$. Hitherto confounded with the true *E. orientalis*, which is much smaller, and whose wings measure only $7\frac{1}{2}$ inches.

190. Chrysomus *zanthopygius*.



Glossy black: the head, rump, shoulder covers, and the whole of the under plumage, golden yellow.

Inhabits ——? Mus. Nost. (*fig.* 71. *b*)

Total length nearly 8 inches; bill, gape $\frac{9}{10}$; front the same; wings 4; tail, beyond, $1\frac{1}{4}$; base 3; tarsus 1; hind toe and claw $\frac{8}{10}$; middle ditto 1. Claws long, slender, and very slightly curved. The yellow on the head does not reach so far as the nape: the inner wing covers, and the margin of the carpus, are also yellow. The total confusion into which Dr. Wagler has thrown the whole of the American *Sturnidæ*, by uniting them into *one genus*, renders it now utterly impossible to determine any but the most common species: his treatment of this group, and of the *Psittacidæ*, is truly anomalous; and both seem to be regulated more by caprice than by any one principle of classification, natural or artificial. Our present species is more typical than *C. icterocephalus* (*a*), which has the hind claw shorter and more curved.

191. Chloropsis *curvirostris*.

Green: maxillary stripe violet: shoulder covers vivid blue: middle of the body, and under tail covers, orange.

Inhabits India. Mus. Nost.

Total length 7 inches; bill, gape 1; front $\frac{7}{10}$; wings $3\frac{1}{3}$; tail, beyond, $1\frac{3}{10}$; base $2\frac{1}{2}$; tarsus $\frac{13}{20}$; hind toe and claw $\frac{1}{2}$. The bill is much lengthened, and both mandibles are curved.

192. Dulus *nuchalis*.

Above, olive brown: nape with a transverse bar of white: beneath, cream colour, with distinct stripes of dark brown.

Inhabits Brazil. Mus. Nost.

Total length 7 inches; bill, gape $\frac{13}{20}$; front $\frac{4}{10}$; wings $3\frac{1}{10}$; tail, beyond, $1\frac{8}{10}$; base 3; tarsus $\frac{15}{20}$. Edges of the quills and tail feathers olive green: ears and lores blackish: tail very slightly forked; the two middle tail feathers cinereous: bill pale.

193. Anabænus *rufescens.*

Entirely rufous: paler beneath: tail black, tipt with white, and crossed by numerous greyish bands: vent brown.

Inhabits India. Mus. Nost.

Total length 13 inches; bill, front 1; gape $1\frac{2}{10}$; wings $4\frac{1}{2}$; tail, beyond, 5; base 1; tarsus 1; middle toe the same. Bill green: orbits and lores naked. Tail long, broad, graduated: the upper covers banded with black and dark grey; the under, blackish brown.

194. Crotophaga *semisulcata.*

Culmen sharp and carinated, but not much elevated: upper mandible with three elevated lines; convex between: under mandible smooth. Size and plumage of *Sulcirostra.*

Inhabits South America. Mus. Nost.

Total length about 13 inches; bill, gape $1\frac{2}{10}$; wings 5; tail, base $7\frac{1}{4}$; tarsus $1\frac{2}{10}$; middle toe and claw the same.

195. Ploceus *auricapillus.*

Head above, upper tail covers, and all the under parts, bright yellow: frontal line, lores, ears, and chin, velvet black: above the frontal line a shade of rufous. First quill spurious; second hardly shorter than the third.

Inhabits South Africa. Dr. Burchell's Collection, No. 152.

Closely resembles *P. personatus;* but it is smaller, and hardly 6 inches long; bill, gape $\frac{13}{20}$; wings $3\frac{1}{10}$; tail, base $2\frac{3}{10}$; tarsus $\frac{17}{20}$; hind toe and claw $\frac{13}{20}$. Excepting the back, the wings, tail, and lower part of the neck, the whole plumage is of a clear, full, and bright yellow: the back feathers have an olive tinge, with an almost imperceptible dusky stripe; the black mark does not descend so far on the throat; and the yellow, just in front of the head, is tinged with bright rufous:

the upper and under tail covers are bright yellow. The first quill is spurious, and only $\frac{8}{10}$ of an inch long.

196. Pipillo *macronyx*.

General plumage resembling *P. maculata;* but the spots on the wings, the under wing covers, and tips of the lateral tail feathers, are yellow. Feet and claws very large.

Inhabits Mexico. Mus. Nost.

Total length 8 inches; wings $3\frac{6}{10}$; tail, base 5; tarsus $1\frac{2}{10}$; middle toe and claw $1\frac{1}{10}$; hind ditto $\frac{9}{10}$. Ground colour of the upper plumage olive green: bill deep black: legs pale. Another specimen, which I view as the female, has no yellow spots whatever, either on the back, wings, or lateral tail feathers; although in other respects they are both alike.

197. Pipillo *fusca*.

Greyish brown above; white beneath: chin and throat fulvous, with dusky spots: under tail covers fulvous: tail blackish brown, unspotted.

Inhabits Mexico. Mus. Nost.

Total length $7\frac{1}{2}$ inches; wings $3\frac{1}{2}$; tail, base 4; tarsus $\frac{9}{10}$; middle toe and claw the same; hinder ditto $\frac{13}{20}$. Rather smaller than *maculata*. Bill and legs pale: the latter smaller, and the claws more curved, than in any other known species: crown with a pale rufous tinge.

198. Arremon *flavirostris*.

General plumage of *A. torquatus;* but the bill is bright yellow, and the hinder toe longer.

Inhabits Brazil. Mus. Nost.

Total length $6\frac{1}{2}$ inches; bill, gape $\frac{6}{10}$; front $\frac{5}{10}$; wings 3; tail, beyond, 2; base 3; tarsus nearly 1; middle toe and claw $\frac{8}{10}$; hinder ditto $\frac{13}{20}$. Top of the bill with a line of black, the rest fine yellow: the three stripes on the head, which in *A. torquatus* commence at the base of the bill, do not begin in this so far forward; and the white ones commence *above*, and not *before*, the eye: the tail feathers are longer and narrower.

199. Leucophrys *pileatus*.

Above, light earthen brown; beneath, white: front, crown, and sides of the chin, black: stripe above the eye, rump, and upper tail covers, pure white.

Inhabits South Africa.

Total length 7 inches; bill, gape $\frac{13}{20}$; wings $4\frac{1}{10}$; tail, beyond, $\frac{3}{4}$; base $2\frac{3}{4}$; tarsus $\frac{9}{10}$; middle toe and claw $\frac{8}{10}$; hind ditto $\frac{13}{20}$. The white stripes over the eye are very broad behind, and narrow in front, and almost meet at the nape. Upper tail feathers very long. Wing covers with two broad cream white bands; all the quills edged with the same: bill black: legs pale.

200. Gallinula *ecaudata*.

Olive: crown, upper tail covers, and the whole of the under plumage, deep rufous: sides of the head cinereous: tail feathers olive, nearly obsolete, very soft, almost concealed by the covers.

Inhabits ——— ? Mus. Nost. Pl. Enl. 753. ?

Total length 6 inches; bill, front $\frac{13}{20}$; wings $3\frac{2}{10}$; tarsus $1\frac{1}{10}$; middle toe and claw $1\frac{1}{2}$; hind ditto $\frac{1}{2}$. The rufous on the under plumage is uniform from the chin to the vent. The tail feathers are exceedingly short, and the covers long, — thus leading to *Alecthelia*.

201. Gallinula *modesta*.

Upper plumage, and under tail covers, olive brown: beneath, cinereous: chin and part of the throat white. Bill one inch long.

Inhabits India. Mus. Nost.

Total length about 9 inches; bill, gape $1\frac{1}{4}$; wings $4\frac{6}{10}$; tarsus $1\frac{6}{10}$; middle toe and claw 2; hind ditto $\frac{13}{20}$. The colouring is particularly simple. The form is typical, although the upper mandible is more curved than usual. The tail and its covers are like the back: bill green: legs brown.

202. Gallinula *leucosoma*.

Above, light brown; beneath, white: crown and neck cinereous: lores black: before the eye, and beneath the ear, are two white stripes.

Inhabits India. Mus. Nost.

Size small. Total length $7\frac{1}{2}$ inches; bill, base $\frac{6}{10}$; gape $\frac{7}{10}$; wings $\frac{2}{10}$; tarsus 1; middle toe and claw $1\frac{6}{10}$; hind ditto $\frac{13}{20}$. A typical and elegant species. Ears, and sides of the neck, light cinereous; above the former, a clear white stripe: crown nearly

black: flanks, and under tail covers, fawn colour: from the chin to the vent pure white: bill and legs pale.

203. Gallinula *ruficollis*.

Crown and sides of the head, throat, and breast, cinereous: neck, above, clear rufous: under plumage white: flanks and tail covers banded with black and white: wing covers with narrow whitish bands.

Inhabits America. Andersonian Museum of Glasgow.

Total length about 5 inches; bill, gape $\frac{7}{10}$; front $\frac{6}{10}$; wings 3; tarsus 1; middle claw $1\frac{3}{10}$; hinder ditto $\frac{1}{2}$; outer $1\frac{1}{10}$. Nearly an inch shorter than *G. albifrons*, No. 171.; from which it is further distinguished by the under tail covers being banded with black upon a whitish ground, instead of being deep rufous: the lower flanks, and the upper tail covers, are crossed in the same way; but the sides of the body are banded with white upon a black ground: ears and sides of the head pale cinereous: all the under plumage is white, having the sides cinereous; the white only begins at the base of the lower mandible.

204. Œdicnemus *Americanus*.

Sides of the crown with a black stripe: quills blackish brown, with a white external band at the base of the sixth, seventh, and eighth. Tarsus four inches long.

Interior of Guiana. Mr. Schomburgh.

Total length 17 inches; bill, front $1\frac{6}{10}$; gape $2\frac{2}{10}$; wings 9; tail, base 5. General colour of the other species; but all the wing covers are like the back; and the only external white on the wings are the bases of the sixth, seventh, and eighth quills: sides of the head white, and of the crown and nape black.

205. Œdicnemus *recurvirostris*.

Grey and unstriped: body, beneath, white: ears, stripe at the gape, and sides of the crown, black: shoulder covers black. Culmen of the bill very straight: gonys considerably curved upwards.

Inhabits Ava. Andersonian Museum.

Total length about 20 inches; bill, gape $3\frac{2}{10}$: from the front $2\frac{7}{10}$; wings 10; tail, base $4\frac{1}{2}$; tarsus $3\frac{1}{4}$; middle toe and claw $1\frac{5}{10}$; outer $1\frac{1}{2}$; inner $1\frac{3}{10}$; naked space above the tarsus $1\frac{7}{10}$. A

skin of this extraordinary bird is in the Andersonian Museum at Glasgow. The upper plumage is entirely without those dark stripes so common in the genus: the front and lores are white; a stripe of the same colour passes over the eye and ears, where it unites with another, which also passes *under* the ears: the shoulder covers are deep black, separated from the grey of the other covers by a light border: the quills are black; the three last of the primaries being white, with a black band before their tips; and there is a white external band on the middle of the first quill, continued, internally only, on the two next. Tail short and grey; the lateral feathers with a band of white, and tipt with another of black: the neck and breast are grey: but the body, beneath, is white: bill black: legs yellow.

206. Trogon *Peruvianus*.

Female.—Upper plumage, chin, throat, and sides of the body, cinereous: ring round the eye, and pectoral band in the middle of the breast, white: lower part of the body rose-colour: three lateral tail feathers black, with numerous oblique white bands on the outer web, narrow white tips, and white dots at the edge of the inner webs: wing covers lineated.

Inhabits Peru. Mr. W. Hooker's Collection.

Total length 9¼ inches; bill, gape $\frac{7}{10}$; front $\frac{5}{10}$; wings 3½; tail, beyond, 3; from the base $5\frac{2}{10}$. Of this species I have only seen the female, which very much resembles that of my *leucurus* in the whole of the upper plumage; but it is easily distinguished by its smaller size, by the obsolete white pectoral bar, by the red commencing much higher on the breast, and, above all, by the distinct white bands on the tail, of which there are about 13 on the outermost feather: the white tips are also not broader than these bars,—a circumstance very unusual in this genus.

207. Furnarius *longipennis*.

Above, brown; beneath, white: quills with a broad white basal band: tail black; the two outermost feathers edged and tipt with rufous. Bill short: wings lengthened.

Inhabits Peru. Mr. W. Hooker's Collection.

Total length 6½ inches; bill, gape $\frac{6}{10}$; front $\frac{6}{10}$; wings $3\frac{3}{4}$; tail, beyond, $\frac{7}{10}$; base 3; tarsus 1; middle toe and claw $\frac{9}{10}$; hind ditto $\frac{7}{10}$. This is a very singular species: having larger and

more pointed wings than the next; the second, third, and fourth quills being nearly of equal length, and longer than the others; and the tail only projects three quarters of an inch beyond: the carpus is white; and there is a spot of the same colour in the middle of the outermost feathers of the spurious wings: the broad white band across the base of the quills gives it an angulated form, but it disappears on the four exterior primaries: behind the eye is a white stripe, leaving the ears dark brown: the tail is rounded, the webs much worn, and the shafts in a slight degree rigid: the form of the bill, also, makes some approximation towards that of *Certhia* and *Synallaxis*. I hope soon to indicate the subgenera of this interesting group, of which there are several other species. I have no doubt it is the grallatorial division of the *Certhianæ*.

208. Furnarius *fasciatus*.

Entirely banded, both above and beneath, with blackish brown and white: crown grey, with dusky spots: tip of the chin white. Tail rather lengthened.

Inhabits Peru. Mus. Hooker. Nost.

Total length 8½ inches; bill, gape 1 $\frac{2}{10}$; front 1; wings 3½; tail, beyond, 2; base 3$\frac{3}{4}$; tarsus 1; middle toe and claw $\frac{9}{10}$. Form typical. Bill nearly straight: tail with the lateral feathers graduated; third and fourth quill equal, and longest.

209. Genus. Zenophasia. *Nob.*

Wings, tail, and feet as in *Dendrocolaptes*. Outer and middle toe of equal length; inner toe much shorter, and equal to the hallux: anterior claws much curved; hinder less so: bill short, straight, strong, nearly as broad as it is high, suddenly and considerably depressed near the tip, which is rounded, and slightly recurved; gonys ascending; commissure straight.

This most singular form obviously represents *Zenops*, in the subfamily of *Certhianæ*, from which it totally differs in the structure of its bill, tail, and feet: in the two latter members it agrees with *Dendrocolaptes*, to which it is closely related in affinity. Nevertheless, as the five types of that genus have been already pointed out, it follows that *Zenophasia* should come immediately after: and, under these views, it will take the place hitherto assigned to *Sclerurus*; which thus appears to

be only a subordinate form, connecting this with *Furnarius*.* I form this opinion, because, by this disposition of the groups in the two circles, the contents of each will mutually represent each other, in the following manner: —

Anabatinæ.	Certhianæ.
Dendroma.	*Oxyurus.*
Synallaxis.	*Certhia.*
Geobates.	*Furnarius.*
Zenops.	*Zenophasia.*
Anabates.	*Dendrocolaptes.*

Zenophasia *platyryncha.*

Brown, inclining to chestnut on the back, and to fulvous beneath: chin, throat, breast, and sides of the head, varied with whitish stripes: body immaculate: inner base of the quills with a fulvous white band: inner wing covers white: tail rufous.

Inhabits Brazil. Mus. Nost.

Size of *Zenops affinis;* but the tail is considerably longer. Total length $5\frac{1}{4}$ inches; bill, gape $\frac{6}{10}$; front $\frac{8}{20}$; wings $2\frac{1}{2}$; tail, beyond, $1\frac{6}{10}$; base $2\frac{7}{10}$; tarsus $\frac{4}{5}$. The ground colours are precisely the same as the rest of the *Dendrocolapti;* but there are no pale stripes on the upper plumage, and they disappear a little beyond the breast.

210. Zenops *affinis.*

Chin, part of the throat, and stripe beneath the ears, pure white: tail rufous; the third pair of lateral feathers black on their inner webs: bill with the culmen very straight, and the commissure recurved.

Inhabits Brazil. Mus. Nost. *Zenops genibarbis,* Zool. Ill. i. pl. 100. nec. Temm. Pl. Col. 150. f. 1.

M. Temminck observes of the tail of his *genibarbis,* "*le roux vif* est placé au bout de chaque penne, le deux demilieu exceptées, qui sont d'un noir profond; le roux occupe plus d'espace sur les pennes latérales qui sur celles placées vers le centre." In this, on the contrary, the whole of the feathers

* Another view, indeed, may be taken of this question; namely, that the birds I have placed under the subgenus *Dendrocolaptes,* are but aberrant species of my *Ziphorynchus:* if this be correct, which I at present doubt, then *Z. procurvis* will stand as the type of *Dendrocolaptes,* and my subgenus *Dendrocolaptes* must be abolished: *Zenophasia* would then come in as one of the five subgenera, still representing *Zenops as a subgenus of Dendrocolaptes.*

are entirely rufous, except the pair which follow the two middle pair, which are deep black on their inner webs only. In M. Temminck's figure the commissure is straight, but in this it is remarkably recurved: the ground colour of the quills is blackish brown, with an oblique rufous band across the primaries and secondaries; but this is also seen in *Z. genibarbis* and *dentirostris;* and all three have a cream-coloured stripe above the ears.

211. Zenops *dentirostris.*

Bill very short; the commissure nearly straight; the tip of the upper mandible slightly inclined downwards, and obsoletely notched. Tail rufous; two pair of the lateral feathers black on their inner webs.

Inhabits Demerara? Mus. Nost.

Smaller than *Z. affinis.* Total length 4 inches; bill, front $\frac{3}{10}$; wings $2\frac{2}{10}$; tail, beyond, $\frac{1}{2}$; base $1\frac{1}{2}$; tarsus $\frac{1}{2}$; middle toe and claw $\frac{6}{10}$. The plumage is coloured like the last, excepting that two pair, and not one only, of the lateral tail feathers are black internally, and the white feathers of the throat are edged with fulvous brown. This singular little species, in its size, and particularly in the tail, agrees with Vieillot's *ruficaudus;* but the peculiar shape of the bill forbids the supposition of their being the same.

212. Certhia *Asiatica.*

Tail with numerous black bars; the tips of the lateral feathers obliquely rounded. Bill nearly an inch long.

Inhabits India. Andersonian Museum.

Total length $5\frac{3}{4}$ inches; bill, from the gape $\frac{9}{10}$; from the front $\frac{3}{4}$; wings $2\frac{9}{10}$; tail, beyond, $1\frac{1}{10}$; base $2\frac{6}{10}$; tarsus $\frac{1}{2}$; middle toe and claw the same; hinder ditto $\frac{3}{4}$. The general appearance of this new species of true *Certhia* is much like that of *C. familiaris,* but it is much larger, and the tail feathers are more obtuse: the crown is almost dull black, with only a few narrow pale stripes: the tail feathers, scapulars, and base of the primaries are crossed by narrow black transverse bars, of which there are about twenty on the middle tail feathers. In other respects, the colours and markings have a general resemblance to those of *C. familiaris.*

213. Centurus *flaviventris.*

Head grey; front and nape golden yellow; spot in the middle of the crown (in the male only) crimson: middle of the belly orange yellow: rump pure white.

Inhabits —— ? Liverpool Museum.

Total length 9 inches; bill, from the gape $1\frac{1}{2}$; front $1\frac{1}{4}$; wings 5; tail, beyond, $1\frac{8}{10}$; from the base $3\frac{1}{2}$; tarsus $\frac{7}{10}$; hind toe and claw scarcely 1. The upper plumage, like all the known species of *Centurus*, is banded with black and white, excepting the rump, which is pure white: the under plumage is cinereous white; the middle of the belly being fine buff yellow: the red spot on the crown is oval, and isolated: tail entirely black, except the outer feather, which has three obsolete bars and a white tip. The female is known by the crown being entirely cinereous grey.

214. Centurus *rubriventris.*

Front of the head, cheeks, and chin golden yellow; ears, and connected stripes over the eyes, cinereous white; nape, middle of the crown, and the belly, crimson: rump pure white.

Inhabits —— ? Mus. Nost.

This most elegant species is the smallest *Centurus* I have yet seen. Total length $7\frac{8}{10}$ inches; bill, gape 1; front $\frac{8}{10}$; wings $4\frac{3}{10}$, nearly as long as the tail, which from the base is 3; tarsus $\frac{6}{10}$. Upper plumage, as in the last, banded with black and white; the latter being narrower than the former: the broad greyish white band over each eye unites in front, and there becomes white, so as to separate the golden yellow round the bill, from the crimson of the crown; the yellow covers all the face before the eye, and passes round the chin: the under plumage is light cinereous grey; the middle of the body and belly being tinged with crimson: the tail feathers are black and unspotted, except the base of the middle pair, and a few spots and obsolete bands on the outermost: bill deep black.

125. Quiscalus *Peruvianus.*

Bill one inch and a half long. Plumage glossy purple on the head and neck, changing to green on the body beneath: back, wings, and tail black, with an obscure greenish gloss.

Inhabits Peru. Mr. W. Hooker's Collection. Mus. Nost.

Total length about 13½ inches; bill from the gape $1\frac{7}{10}$; front $1\frac{1}{2}$; wings $7\frac{1}{4}$; tail, from the base $7\frac{3}{4}$; tarsus nearly 2; middle toe and claw $1\frac{7}{10}$; hinder ditto $1\frac{3}{4}$. Commissure of the bill slightly sinuated in the middle. The purple of the head and part of the neck gradually becomes steel blue on the breast, and then assumes a greenish tinge on the interscapulars and under part of the body: the greater wing covers, quills, back, rump, and tail are almost entirely glossy black.

216. Quiscalus *crassirostris*.

Bill strong, one inch and a quarter long. Plumage glossy purple on the head, neck, back, and body: wings and tail glossy black.

Inhabits Jamaica. Mr. W. Hooker's Collection.

Total length about 10 inches; bill, from the gape $1\frac{1}{2}$; front $1\frac{1}{4}$; wings 6; tarsus $1\frac{4}{10}$; middle toe and claw $1\frac{3}{10}$; hind claw $1\frac{2}{10}$. Size of *Q. versicolor*; but differs in having no green or copper reflections whatsoever upon the plumage: the bills of both are nearly of the same size and thickness; but in this the commissure is not sinuated, the margins are more inflected, and the tarsus rather longer: the third quill is shorter, and not equal to the fourth.

217. Aglaïa *melanotis*.

Vivid green, striped with black above: middle of the throat, and body beneath, pure yellow: front, and spot on the sides of the head, velvet-black: wing covers and quills black, margined with green and blue: crown and rump yellowish.

Inhabits Peru. Mr. W. Hooker's Collection.

Total length 5 inches; bill, front $\frac{4}{10}$; wings $2\frac{3}{4}$; tail, beyond, 1; base 2; tarsus $\frac{6}{10}$. General form and structure of *A. citrinella*, to which it is closely allied: the crown and back are marked in the same way with black, but the feathers on the head are more scale-like; the chin is green; but the tip, close to the bill, is black: the inner wing covers are pure white: there is a yellowish gloss on the crown; and a brighter yellow, shaded with green, is on the rump: the shoulder and lesser wing covers, as well as the primaries, are edged with blue: but the rest of the wing feathers have green edgings: a broad band of black is in front, and a large patch of the same covers the ears: before

the eye is a crescent-shaped spot of light and vivid beryl green; the tail is edged with blue green.

218. Aglaïa *cæruleocephala*.

Head and chin entirely cærulean blue: neck, back, breast, and body velvet-black, varied with dark blue on the flanks: rump, upper tail and wing covers, changeable golden yellow.

Inhabits Peru. Mr. W. Hooker's Collection.

Size and general structure of the next. Lores velvet-black: head beryl blue, richly glossed with violet on the front and chin: the lower half of the neck, both above and below, as well as the interscapulars, the back, and all the under plumage, are deep velvet-black, except the sides of the body, where the feathers are tipt with bright purple blue; but those on the under tail covers are edged with blue green, as are also the quill and tail feathers: under wing covers velvet-black: the wing covers are particularly brilliant.

219. Aglaïa *Peruviana*.

Above, green, unspotted: rump, and plumage beneath, light cærulean blue: front, crown, and sides of the head rufous red.

Inhabits Peru. Mr. W. Hooker's Collection.

Size and general structure of the last; but differs in having the whole of the under plumage light blue; in the shoulder covers being green, instead of golden yellow; and in the rump being cærulean blue: the rufous on the head in both species is terminated on the nape by a yellow margin. In young birds the upper part of the head is green; the blue of the body gradually assumes a greenish tinge towards the vent.

220. Aglaïa *chrysoptera*.

Green, unspotted: middle of the breast and body sky-blue: shoulder covers golden yellow: front, crown, and sides of the head rufous red.

Inhabits Demerara. *Tanagra gyrola*, Auct. Pl. Enl. 133. f. 2.

Total length $4\frac{1}{2}$ inches; bill front $\frac{7}{20}$; wings $2\frac{7}{10}$; tail, beyond, $\frac{5}{4}$; base 2; tarsus $\frac{6}{10}$. As two species appear to have been confounded under the specific name of *gyrola*, I have retained that name to the one figured in Zool. Ill. ii. pl. 28., which has no

blue on the plumage, nor yellow on the wing covers, and is peculiar to Brazil: in this, on the contrary, the middle of the breast and body, down to the vent, is of a bright cærulean blue: the rich rufous of the head extends so as to margin the chin round the base of the lower mandible: the thighs are rufous.

221. Arremon *semitorquatus*.

Upper mandible of the bill black; the lower yellow: neck with a black semi-collar, open in front.

Inhabits Brazil. Mus. Nost.

Size and colour of *A. flavirostris*, No. 198.: but the white stripe, which in that species commences behind the eye, takes its origin, in this, from the nostrils, as in *torquatus*, and consequently passes over the lores; the bill is shorter, and thicker at the base; and the wings are also rather shorter: the legs and feet are dark brown, instead of a light fulvous; nor is the outer edge of the carpus bright yellow: the semi-collar is so interrupted as to leave only two black patches: the tip of the chin is also black.

222. Subgen. Pipreola.

Subgen. Character.—Wings moderate; the primaries not narrowed: tarsus shorter than the middle toe; lateral toes nearly equal, the inner being scarcely shorter than the outer; inner, cleft to the base; outer toe connected to the middle only as far as the first joint: tail very short.

The peculiar structure of the feet in this bird, so different from that of the typical *Pipræ*, induces me to consider it as the type of one of the subgenera; *Metopia* is probably another; and I have an imperfect acquaintance with a third.

Pipreola *chlorolepidota*.

Above, parrot green; beneath, yellow, each feather having a green border: chin with a central stripe of orange yellow: quills tipt with white.

Inhabits Peru. Mr. W. Hooker's Collection.

Size of a Robin. Total length $5\frac{1}{2}$ inches; bill, front $\frac{4}{10}$; from the gape $\frac{6}{10}$; wings 3; tail, beyond $\frac{8}{10}$; base 2; tarsus, $\frac{6}{10}$; middle toe and claw $\frac{7}{10}$. The green is particularly vivid on the back; it forms a margin round the breast feathers, which are pale yellowish, having an additional blackish lunule in the centre, only seen when the feathers are raised: these marks almost disappear on

the belly: the tail is even, each feather being mucronate: feet pale. I doubt not that this is the representation of the genus *Ptilochloris*, in the neighbouring circle of *Vereoinæ*.

223. Crypticus *superciliosus*.

Above, olive green: ears, interscapulars, and under plumage, rufous: stripe beneath the ear, and down the middle of the throat, black; the latter bordered with blue: crown margined by a broad superciliary stripe of beryl colour: tail and secondaries blue, broadly tipt with black.

Inhabits Spanish America. Mus. Nost. *Momotus superciliosus*. Liverpool Institution.

Total length 14 inches; bill, gape $1\frac{8}{10}$; front $1\frac{1}{2}$; wings $4\frac{1}{2}$; lateral tail feathers, beyond, 2; middle tail feathers, from the base $8\frac{1}{2}$; naked part of the shafts $2\frac{1}{2}$. This is the second species of this remarkable subgenus now known. The narrow black stripe beneath the ears takes its rise from the orbits, and extends half way down the neck, having a small line of blue at its inner edge, just beneath the eye and orbits: the black stripe down the throat begins at the chin, and ends at the breast: middle of the crown olive green: the spatules of the two middle tail feathers are very large, and the terminal half are deep black: the lateral tail feathers are tipt with deep black, and graduated: the beryl green stripes over the eyes are particularly large and brilliant.

224. Cassicus *latirostris*.

Bill broader than high. Plumage black: head and neck, above, chestnut: lateral tail feathers yellow, tipt with black.

Inhabits Peru. Mr. W. Hooker's Collection.

Total length about 12 inches; bill, gape $1\frac{3}{10}$; front $1\frac{5}{10}$; breadth of the frontlet $\frac{5}{10}$; wings 7; tail, base $4\frac{1}{2}$; tarsus $1\frac{2}{10}$. The remarkable form of the bill in this new and singular species deserves particular attention, because it is evidently a modification of that broad and depressed structure which belongs to the fissirostral type, and to its representatives, throughout this class. The frontlet advances far upon the forehead, and is there so much dilated as to be three times as broad as this mandible is in depth, which consequently becomes remarkably depressed; the under mandible is much thicker than the upper; and both, on their terminal half, are suddenly narrowed and

compressed. The wings have an obscure greenish gloss; but there is none on the body: the chestnut on the crown and back of the neck is very dark, and blended with the unglossed black of the upper and under plumage: the bill appears to have been white, or pale yellow: the four middle tail feathers, the tips of the others, and the external margins of the outermost, are black; the rest fine yellow: third and fourth quills longest.

225. Rhamphopis *melanogaster*.

Above, brownish black: rump, tail covers, and body beneath, bright crimson: head, throat, and breast, reddish chestnut: thighs, and middle of the body, black.

Inhabits Peru. Mr. W. Hooker's Collection.

Size of *R. nigro-gularis* of Spix: form typical. Total length about $7\frac{1}{2}$ inches; bill, gape $\frac{8}{10}$; front $\frac{1}{2}$; wings $3\frac{2}{10}$; tail, beyond, $1\frac{8}{10}$; base $3\frac{3}{10}$; tarsus $\frac{8}{10}$. The head, throat, and breast are of the same dark colour as in *R. atrococcineus;* but the rump, tail covers, and the sides of the body are bright crimson; which colour blends into the darker hue of the throat, upon the breast: the middle of the body and belly are deep black. The female is light brown above, graduating into rufous red on the rump and tail covers: the under parts are of the same tint, but not so bright; the throat being brown. Wings and tail black in the male, and brown in the female: bill black; the base bluish white.

226. Lamprotornis *chloropterus*.

Uniform shining sea-green on the whole of the back, wings, and tail: ears, shoulder and inner wing covers, flanks, and belly, blue; greater and lesser wing covers with black spots.

Inhabits Western Africa. Mus. Nost.

Total length about $7\frac{1}{2}$ inches; bill, gape 1; front, $\frac{6}{10}$; wings $4\frac{1}{2}$; tail, beyond, $\frac{3}{4}$; base 3; tarsus 1. The smallest African species I have yet seen of this genus. It has a general resemblance to *Cyanotis*, but is much smaller; and the tail, instead of being purple, is of the same glossy green colour as the wings, quills, back, and all the upper plumage: the ground colour of the under parts is the same; but on the flanks, belly, and inner wing covers the green changes to blue, yet without any lilac or purple reflections: the ears and the shoulder covers are also rich blue: under tail covers green. This has come into my possession since the publication of *The Birds of Western Africa*.

227. Lamprotornis *phœnicopterus.*

Sea green, glossed with blue on the head, rump, tail, and thighs, and with violet on the ears: shoulder covers greenish blue, margined by a flame-coloured and violet band. Inner webs of the primaries with a central notch.

Inhabits South Africa. Dr. Burchell's Collection, No. 336.

Total length about 9½ inches; bill, gape $1\frac{3}{20}$; front $\frac{8}{10}$; wings $5\frac{3}{10}$; tail, beyond, about $1\frac{1}{2}$; base $3\frac{3}{4}$; tarsus $1\frac{2}{10}$. This is unquestionably the *Nabirop* of Le Vaillant, pl. 89., which Linnæan authors have continued to place with their *Turdus auratus*, Pl. Enl. 540., although Le Vaillant himself considered them distinct. It is one of the most beautiful of the whole genus, distinguishable at first sight by the red or fiery coloured band on the last range of the shoulder covers, which is deep copper, glossed with lilac and flame-colour; the upper range of feathers being green blue: the ears and sides of the head are tinged with violet blue; and the blue predominates over the green on the rump, tail, thighs, vent, and under tail covers: the inner wing covers are violet blue, and the inner webs of the quills dull blackish green; the greater and lesser covers are spotted with black.

228. Rhynchops *albicollis.*

Front lores, neck, throat, and under plumage, white: crown, nape, body above, and wings, brown: tail white, the two middle feathers with their inner web brown.

Inhabits India. Mus. Nost.

Total length about 18 inches; bill, the under mandible from the gape $3\frac{6}{10}$; wings $12\frac{1}{2}$, about $4\frac{1}{2}$ longer than the tail; tail, base $4\frac{1}{4}$; depth of the fork $\frac{9}{10}$; tarsus $\frac{9}{10}$. Bill orange yellow, dusky horn colour towards the end: feet yellow; claws blackish. This species is at once distinguished by having the whole of the neck, both above and below, pure white: the tail is the same, but the two middle feathers have a stripe of brown: the crown, nape, back, and scapulars are dark brown, passing into blackish on the wings: all the quills are tipt more or less with white, except the six first primaries: the brown on the crown includes the eye and ears, but ends abruptly at the nape; and the white of the upper neck advances on the interscapulars, but terminates abruptly there. There now appears to be, at the least, five species of this singular genus; namely, 1. the *borealis* of North America (the *nigra* of Wilson);

2. *albirostris*, Lich. Berlin Cat. 80.; 3. *orientalis*, Rupp. Atlas, pl. 24.; 4. *melanurus*, Nob. No. 176.; 5. *albicollis*. I have not yet seen the *cinerascens* and *brevirostris* of Spix, placed by Wagler as the young, in different stages of growth, of *borealis*.

229. Rallus *nivosus*.

Black: wings and back varied with olive brown: upper plumage with numerous snow-white oval spots on the neck and back, and with stripes on the scapulars; under plumage entirely banded and spotted with white and black.

Inhabits —— ? Mus. Nost.

Total length 10½ inches; bill, gape $1\frac{7}{10}$; front $1\frac{8}{10}$; wings $4\frac{7}{10}$; tail, beyond, $\frac{7}{10}$; base $2\frac{3}{10}$; tarsus $1\frac{4}{10}$; middle toe and claw $1\frac{3}{10}$; hind ditto $\frac{7}{10}$. Bill strong; the upper mandible much curved towards the tip, and distinctly notched; but the gonys is straight: the colour seems yellowish green, with a red spot at the base. The ground colour of the whole plumage is black; but the margins of the feathers on the wing covers, scapulars, back, and rump are olive brown: quills sooty black; the outermost with five white marginal spots: under tail covers white: crown and lores blackish; the former with a few whitish specks: each feather of the neck and under scapulars has two oval spots, purely white, near the tip: tail brownish black, edged with olive: legs red: the under plumage is entirely black and white, striped on the neck, and banded on the body.

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